Memorandum

To: *Rebecca Thomas, EPA, Libby OU5 RPM*
Mike Cirian, P.E., EPA, Field Team Leader

From: *David Schroeder, P.G., PMP*
Karin Mainzhausen, P.E.

Date: *September 22, 2011*

Subject: *Libby OU5 – Petroleum Hydrocarbon Assessment*

As part of ongoing response actions at the Libby Asbestos Site, an area within Operable Unit 5 (OU5) (former Stimson Lumber facility) was excavated due to the presence of vermiculite-containing soils (Figure 1). During the removal activities, stained soil with a strong petroleum like odor was encountered on August 10, 2011 at the location shown on Figure 1. Due to the strong odors, excavation activities were stopped to assess the situation and further characterize the soils being excavated. At the time work stopped, approximately 1,000 cubic yards of stained soils were stockpiled adjacent to the excavation site while another 500 cubic yards had been transported to the amphitheater and former vermiculite mine. The material at the former mine was segregated from other project soils. Due to the presence of high quantities of vermiculite at OU5, excavation advanced to three feet below ground surface in some areas. For safety reasons, a cover layer of soil (i.e., 6 inches) was backfilled within the excavated areas.

Sampling Activities

Following Montana Department of Environmental Quality (MDEQ) Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases, three locations were sampled (1R- 45008, 1R-45009, and 1R-45010). The samples were submitted to Energy Laboratories in Helena, Montana, for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) analysis under the Massachusetts Method. In addition, sample 1R-45009, was submitted to CompuChem in Cary, North Carolina, for Toxicity Characteristic Leaching Procedure (TCLP), corrosivity, reactivity and ignitability analysis to determine if the soils should be considered hazardous waste. The three samples were collected from the excavation area; stained-soil stockpile (1R-45008), a location with visibly stained soils within the excavation area (1R-45009), and a location without staining (1R-45010). The sampling locations are shown on Figure 1 and the field notes are included in Appendix A.

FIGURE 1
SAMPLING LOCATION
LIBBY 0U5 - PETROLEUM HYDROCARBON ASSESSMENT
LIBBY, MT

P:\4000 (FPC)\Libby 0U5\Tech memo 20110901\FIGURE 1 - PETROLEUM HYDROCARBON ASSESSMENT.dwg

Sampling Results

VPH and EPH Results

The sampling results for VPH and EPH are summarized in Tables 1 and 2 below. All VPH results were below the method reporting limit while initial screening for EPH showed levels above 200 parts per million (ppm) for two samples. The two samples with EPH screening values above 200 ppm were fractionized to obtain the diesel range aliphatic and aromatic fractions. In addition, Polycyclic Aromatic Hydrocarbons (PAH) analysis was also performed on these samples. The laboratory analytical results are included in Appendix B.

The sample results were compared to the MDEQ Risk-based Screening Level (RBSL) for petroleum-contaminated soils with groundwater less than 10 feet below ground surface (most conservative). Results of the fractionization analysis of sample 1R-45008 were greater than the RBSL for C11 to C22, while the sample result for 1R-45010 was less than the RBSL. All PAH results were non-detect. Based on these results and conversations with the laboratory, the results indicate the contamination is characteristic of highly weathered diesel #2. As part of the overall investigation, representatives interviewed Paul Rumelhart, Executive Director of the Kootenai River Development Council, Inc., about historical activity at the excavation area. He confirmed that the area was once the site of a popping plant and diesel #2 was used to power machines during operation at the site.

Table 1 – VPH Analytical Results.

Analyses	Result			Units	RBSL	Reporting Limit*
	1R-45008	1R-45009	1R-45010			
MTBE	ND	ND	ND	mg/kg/dry	0.08	0.10
Benzene	ND	ND	ND	mg/kg/dry	0.04	0.050
Toluene	ND	ND	ND	mg/kg/dry	10	0.050
Ethylbenzene	ND	ND	ND	mg/kg/dry	10	0.050
m+p-Xylene	ND	ND	ND	mg/kg/dry	200	0.050
o-Xylene	ND	ND	ND	mg/kg/dry	200	0.050
Naphthalene	ND	ND	ND	mg/kg/dry	9	0.10
C9 to C10 Aromatics	ND	ND	ND	mg/kg/dry	100	2.0
C5 to C8 Aliphatics	ND	ND	ND	mg/kg/dry	200	2.0
C9 to C12 Aliphatics	ND	ND	ND	mg/kg/dry	1,000	2.0

Notes:
MTBE – Methyl tert-butyl ether
ND- Non Detect
mg/kg/dry – milligrams per kilogram- dry weight
RBSL - MDEQ Risk-based Screening Level
*The method blank reporting limit is presented as a baseline limit for the sample results presented.

Table 2 – EPH Analytical Results.

Analyses	Result			Units	RBSL	Reporting Limit
	1R-45008	1R-45009	1R-45010			
Total Extractable Hydrocarbons **(Screen-Analysis)**	**2570**	ND	**389**	mg/kg/dry	200	200 (screening limit)
C9 to C18 Aliphatics	159		ND	mg/kg/dry	2,000	200
C19 to C36 Aliphatics	594		34	mg/kg/dry	100,000	20,000
C11 to C22 Aromatics	**639**		139	mg/kg/dry	400	400
Total Extractable Hydrocarbons	1,570		222	mg/kg/dry		2,500
Naphthalene	ND		ND	mg/kg/dry	9	9
2-MethylNaphthalene	ND		ND	mg/kg/dry		
Acenaphthylene	ND		ND	mg/kg/dry		
Acenaphthene	ND		ND	mg/kg/dry	200	200
Fluorene	ND		ND	mg/kg/dry		300
Phenanthrene	ND		0.57	mg/kg/dry		200
Anthracene	ND		ND	mg/kg/dry	4,000	0.7
Fluoranthene	ND		0.49	mg/kg/dry	500	70
Pyrene	ND		0.35	mg/kg/dry	2,000	0.7
Benzo(a)Anthracene	ND		ND	mg/kg/dry	10	0.07
Chrysene	ND		ND	mg/kg/dry	2,000	0.07
Benzo(b)Fluoranthene/ Benzo(k)Fluoranthene	ND		ND	mg/kg/dry	50	
Benzo(a)Pyrene	ND		ND	mg/kg/dry	4	
Dibenz(a,h)anthracene/ Indeno(1,2,3-cd)pyrene	ND		ND	mg/kg/dry	5	
Benzo(g,h,i)perylene	ND		ND	mg/kg/dry		

Notes:
ND- Non Detect
mg/kg/dry – milligrams per kilogram- dry weight
RBSL - MDEQ Risk-based Screening Level
bold – results indicate exceedance of the RBSL.

Hazardous Waste Characterization

One sample (1R-45009) was submitted to CompuChem for hazardous waste characterization. The analytical results from this soil sample confirm the contaminated soils are not a hazardous waste. Analytical data sheets are included in Appendix B.

Toxicity Characteristic Leaching Procedure

Metals

All analyzed TCLP metal results are tabulated in Table 3 below. The results are below the reporting limits and below the Regional Screening Levels for soils.

Table 3. TCLP Metal Results.

Analyses	Result	Units	Qualifier	MCC for TCLP	Reporting Limit	Method
Sample	1R-45009					
Arsenic	5.01	µg/L	J	5,000	2,500	EPA 6010C
Barium	764	µg/L	J	100,000	50,000	EPA 6010C
Cadmium	ND	µg/L	U	1,000	500	EPA 6010C
Chromium	5.15	µg/L	J	500	2,500	EPA 6010C
Lead	1.78	µg/L	J	5,000	2,500	EPA 6010C
Mercury	ND	µg/L	U	200	200	EPA 7470A
Selenium	10.6	µg/L	J	1,000	500	EPA 6010C
Silver	ND	µg/L	U	500	500	EPA 6010C

Notes:
U – Flag indicated the compound was analyzed for, not detected and is reported as less than the Method Detection Limit.
J – Flag indicates the reported result is an estimated value.
MCC for TCLP – Maximum concentration of contaminants for the toxicity characteristics. Published table's units are mg/L; these values were converted to µg/L for ease of comparison.

Herbicides and Pesticides

All analyzed TCLP herbicide (GC-8151A) and pesticide (GC-8081B) results were non-detect.

Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs)

All analyzed TCLP VOC (Method EPA 8260) and SVOC (Method EPA 8270D) results were non-detect.

Reactivity

Reactivity was analyzed for cyanide (Method 9014) and sulfide (Method - EPA 9034). Both results were below the reporting limit.

Corrosivity

The corrosivity analysis was performed using Method EPA 9040B and indicated a pH of 7.17 which is within the acceptable range of >2 and < 12.5.

Ignitability

Ignitability was analyzed using Method EPA 1010A. The ignitability results show a flashpoint above 140 degree Fahrenheit.

Based on these results, the soil sample submitted for analysis is not considered hazardous waste material.

Disposal Approach

On August 30, 2011, CDM, on behalf of EPA, contacted MDEQ and presented the preliminary results to ask for guidance on the best approach to dispose of the asbestos contaminated soils which also contained petroleum hydrocarbons. Rebecca Ridenour, Petroleum Technical Section Supervisor, contacted the representatives of the DEQ Superfund Group (Larry Scusa and John Podolinsky) and Sandi Olsen, Remediation Division Administrator. They agreed that the over-riding human health concern is the asbestos contamination and that the excavated soils should continue to be handled according to the project-specific Response Action Work Plan (Project Resources, Inc. [PRI] 2011) (i.e., transported to the mine site). In addition, the soils should be mixed with other soils already located at the mine (see MDEQ communication included in Appendix C).

On the following day, a conference call was held to ensure consensus on the final disposal approach of the soils. The meeting was attended by EPA, MDEQ, USACE, and the project contractors. It was agreed that the stained asbestos contaminated soils would be transported to the former mine and mixed with other soils already located at the mine site. No soil "treatment" will be required.

References

MDEQ. 2009a. Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. Accessed September 6, 2011. http://deq.mt.gov/statesuperfund/rbca_guide.mcpx

MDEQ. 2009b. Hazardous Waste Program Laws and Rules. Access August 2011. http://deq.mt.gov/HazWaste/hazRules.mcpx

MDEQ. 2009b. Hazardous Waste Program Laws and Rules. Access August 2011. http://deq.mt.gov/HazWaste/default.mcpxs

MDEQ. 2009b. Hazardous Waste Program Laws and Rules. Access August 2011. http://deq.mt.gov/dir/legal/title17.mcpx

PRI. 2011. Response Action Work Plan, Revision 3, Libby Asbestos Project. Libby, Montana. June.

Appendices

Appendix A – Field Notes
Appendix B – Laboratory Results
Appendix C – Communications

Appendix A
Field Notes

THIRD PARTY QUALITY ASSURANCE REPORT (QAR) DAILY LOG OF CONSTRUCTION ACTIVITIES	TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF THE NEXT DAY'S WORK	
PROJECT: Libby Asbestos Site, Libby, MT	PROPERTY ADDRESS:	875 US Highway 2 OU5
	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/9/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01
REMOVAL CONTRACTOR: HFS/Project Resources, Inc.	Weather AM:	52 Degrees F. Sunny.
	Weather PM:	88 Degrees F. Mostly sunny.

GUIDANCE DOCUMENT GOVERNING REMOVAL: RAWP Revision 3.0

ACTIVITY	PERCENT COMPLETE AT END OF DAY	SAMPLES COLLECTED
Staging and Pre-Construction Set-Up	NA	Interior Clearance BD# : NA
Exterior Removal	40	
Expansion of Removal Area	~200% Area A being excavated to 36" BGS	Exterior Clearance NA
Exterior Clearance	5	
Exterior Backfill	NA	Personnel Air Monitoring NA
Exterior Restoration	NA	
Interior Design-Build BD#:	NA	Perimeter Air Monitoring One sample collected.
Interior Containment BD#:	NA	
Interior Bulk Removal BD#:	NA	Clean Room Sampling NA
Interior Detail Cleaning BD#:	NA	
Interior Encapsulation BD#:	NA	
Interior Blocking BD#:	NA	
Interior Spot Cleaning BD#:	NA	
Interior Clearance BD#::	NA	
Interior Restoration BD#:	NA	
Interior Capping BD#:	NA	(CONCRETE / POLY?)

SAFETY: (Include Observances and any Infractions of Approved Safety Plan (i.e., PPE), Safety Manual or Instructions from Government Personnel. Specify Corrective Action Taken.)

No health and safety infractions observed.

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES

Note Times With Each Comment

(Results of QA Inspections / Tests / Deficiencies Observed / Actions Taken / Corrective Actions Taken by the Contractor / Disagreements with Contractor / Verbal Instructions to Contractors (Include Personnel) / Direction from Government Personnel)

Interior Activities

NA

THIRD PARTY QUALITY ASSURANCE REPORT (QAR) DAILY LOG OF CONSTRUCTION ACTIVITIES	TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF THE NEXT DAY'S WORK	
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	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/9/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES CONT.:
Note Times With Each Comment

Excavation /Restoration Activities

0731 K. Beaudoin (CDM) on site. Held a tailgate meeting with M. Kvapil (ER QC). ER has one operator, two laborers, and one QC person at the site. ER is excavating south through the center of area A with a Case CX160B excavator. **0740** P. Lammers (CDM), T. Cook (CDM), and D. Repine (CDM) on site to inquire about the petroleum like odor coming from the site. While in the alley on the northwest end of the area a petroleum like odor was observed coming from the site while ER was excavating the soil. Laborers informed QC that there was a petroleum like odor while they were excavating. TQA recommended to QC and M. Fahland (ER) that ER should move to a different location on the site until the source of the petroleum like odor can be identified. The operator told QC that the removal crew was done excavating in the area with the soil that had the petroleum like odor and would not be moving to a different area within the site. M. Kvapil informed TQA that ER was going to segregate the last truck that may have petroleum impacted soil at the amphitheater. **0826** Off site. **0828** K. Beaudoin notified T. Cook that ER is continuing with removal in the area that may have petroleum impacted soil. **0840** TQA notified J. Sabo (CDM) of the truck going to the mine. **0859** J. Sabo informed TQA that soil from the site was being segregated at the amphitheater. **1350** On site. ER continues with removal to 36" BGS on the western central edge of area A. ER left a stockpile of the soil that may have a petroleum contaminated soil in place and will cover the stockpile over night. K. Beaudoin dressed out in modified level C PPE and entered the exclusion zone to conduct a visual inspection of the excavation. **1430** Widespread low to high amounts of VV observed at 36" BGS. Low to high VV observed along the eastern and western sidewalls of the excavation. K. Beaudoin observed a petroleum like odor while in the exclusion zone. There is black stained soil in the center of the excavation. TQA photo documented the stained soil and stockpile. Soil around and in the sidewall of the concrete pad that was left in the northeast corner of area A has low to high VV in it. ER said that the concrete pad was not be removed at this time. **1442** Off site. **1609** End of day briefing with M. Kvapil. ER has removed ~390 yards of soil from the site. ER covered the stockpile of black soil with poly. Removal will continue tomorrow.

Are Correct Wetting and Tarping Procedures Being Utilized? YES (x) NO ( )

Excavation areas were being soaked. Trucks were being sprayed down.

Have Situations Developed at the Site Which Might Lead to Significant Deviations from the Removal Design?
(Please Note Additional Work Required) **YES (x) NO ( )**

Due to high VV area A is being excavated to 36" BGS. There is an area of soil in area A that is stained black and has a petroleum like odor that may require special handling if it is contaminated with a petroleum product. ER has left a stockpile at the site of the stained soil and it has been reported by J. Sabo that the soil from this excavation was being segregated at the amphitheater.

Change Order Form Signed by Property's Owner? **YES ( ) NO ( )**

Information on Causes for Delay and Extent of Delays (i.e. Weather, Equipment Inoperability, etc.)

NA

ITEMS DAMAGED DURING CONSTRUCTION ACTIVITIES: (Photo Document and Include any Corrective Actions Taken.)

NA

DELIVERABLES SUBMITTED TO PRI? **YES ( ) NO (x)**	**LIST DELIVERABLES:**

REMARKS: (Include Visitors to Project Site and any Other Miscellaneous Comments)

NA

INSPECTOR'S SIGNATURE	PRINTED NAME	DATE
	Kris Beaudoin	8/9/2011

THIRD PARTY QUALITY ASSURANCE REPORT (QAR) DAILY LOG OF CONSTRUCTION ACTIVITIES	TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF THE NEXT DAY'S WORK	
PROJECT: Libby Asbestos Site, Libby, MT	PROPERTY ADDRESS:	875 US Highway 2 OU5
	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/10/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01
REMOVAL CONTRACTOR: HFS/Project Resources, Inc.	Weather AM:	58 Degrees F. Mostly sunny.
	Weather PM:	83 Degrees F. Partly sunny.

GUIDANCE DOCUMENT GOVERNING REMOVAL: RAWP Revision 3.0

ACTIVITY	PERCENT COMPLETE AT END OF DAY	SAMPLES COLLECTED
Staging and Pre-Construction Set-Up	90	Interior Clearance BD# : NA
Exterior Removal	40	
Expansion of Removal Area	NA	Exterior Clearance Four soil samples collected.
Exterior Clearance	30	
Exterior Backfill	2	Personnel Air Monitoring NA
Exterior Restoration	2	
Interior Design-Build BD#:	NA	Perimeter Air Monitoring One sample collected.
Interior Containment BD#:	NA	
Interior Bulk Removal BD#:	NA	Clean Room Sampling NA
Interior Detail Cleaning BD#:	NA	
Interior Encapsulation BD#:	NA	
Interior Blocking BD#:	NA	
Interior Spot Cleaning BD#:	NA	
Interior Clearance BD#::	NA	
Interior Restoration BD#:	NA	
Interior Capping BD#:	NA	(CONCRETE / POLY?)

SAFETY: (Include Observances and any Infractions of Approved Safety Plan (i.e., PPE), Safety Manual or Instructions from Government Personnel. Specify Corrective Action Taken.)

No health and safety infractions observed.

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES

Note Times With Each Comment

(Results of QA Inspections / Tests / Deficiencies Observed / Actions Taken / Corrective Actions Taken by the Contractor / Disagreements with Contractor / Verbal Instructions to Contractors (Include Personnel) / Direction from Government Personnel)

Interior Activities

NA

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	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/10/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES CONT.:
Note Times With Each Comment

Excavation /Restoration Activities

0634 M. Kvapil (ER QC) reported that ER is on site and continuing with removal. **0902** K. Beaudoin (CDM) on site. Held a tailgate meeting with M. Kvapil. ER has one operator, two laborers, and one QC person at the site. ER continues with removal in the west side of area A with a Case CX160B excavator. The stockpile of stained soil that maybe impacted with a petroleum product is covered with poly. **0945** K. Anderson (CDM) on site to collect soil samples. **1000** ER has two laborers on site placing orange fencing at the bottom of the excavation in the sampling areas. **1040** Four soil samples collected. **1055** Off site. **1308** K. Beaudoin calibrated the MiniRae 2000 PID ID #04450 with 100ppm isobutylene. **1341** On site. A. Crites (CDM) and C. Peltier (CDM) on site to collect soil samples from the soil that may be impacted with a petroleum product to identify the contaminate. ER continues with removal in the west side of area A. ER has laid orange fencing over areas that have been sampled. ER has a restoration operator at the site spreading structural fill over the orange fencing with a Bobcat T650 skid steer. **1430** K. Beaudoin dressed out in modified level C PPE and entered the exclusion zone to conduct a visual inspection of the excavation and collect soil from the potentially impacted stockpile and from the stained soil at the bottom of the excavation to conduct head space readings on the soil. ER has lifted the excavation to ~24" BGS because the level of VV has gone from high to low in where ER is excavating in the western portion of the excavation. The restoration crew has placed the orange fencing over the sampled areas of the excavation and is placing a poly barrier over the east and west sidewalls of the excavation. TQA collect five soil samples for head space readings in 16oz mason jars. Samples collected from the north, east, and west sides of the stockpile that is believed to have impacted soil along with a two stained areas on the bottom of the excavation. ER has demarcated the stained areas with T-posts. Headspace results: N 34.1ppm, E 27.4ppm, W 0.0ppm, BE 60.4ppm, and BW 1410ppm. Headspace readings conducted in accordance with **CDM TSOP 1-10.** ER continues to excavate in the western portion of area A. Restoration continues to spread structural fill in the northern portion of area A that has been sampled. ER covered the concrete slab that was left in place with poly. **1506** Off site. **1609** End of day briefing with M. Kvapil. ER has removed ~450 yards of soil from the site. Removal will continue tomorrow.

Are Correct Wetting and Tarping Procedures Being Utilized? YES (x) NO ( )

Excavation areas were being soaked. Trucks were being sprayed down.

Have Situations Developed at the Site Which Might Lead to Significant Deviations from the Removal Design?
(Please Note Additional Work Required) **YES ( ) NO (x)**

Change Order Form Signed by Property's Owner? **YES ( ) NO ( )**

Information on Causes for Delay and Extent of Delays (i.e. Weather, Equipment Inoperability, etc.)

NA

ITEMS DAMAGED DURING CONSTRUCTION ACTIVITIES: (Photo Document and Include any Corrective Actions Taken.)

NA

DELIVERABLES SUBMITTED TO PRI? **YES ( ) NO (x)**	**LIST DELIVERABLES:**

REMARKS: (Include Visitors to Project Site and any Other Miscellaneous Comments)

NA

INSPECTOR'S SIGNATURE	**PRINTED NAME**	**DATE**
	Kris Beaudoin	8/10/2011

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	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/11/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01
REMOVAL CONTRACTOR: HFS/Project Resources, Inc.	Weather AM:	53 Degrees F. Sunny light wind.
	Weather PM:	83 Degrees F. Sunny light wind.

GUIDANCE DOCUMENT GOVERNING REMOVAL: RAWP Revision 3.0

ACTIVITY	PERCENT COMPLETE AT END OF DAY	SAMPLES COLLECTED
Staging and Pre-Construction Set-Up	95	Interior Clearance BD# : NA
Exterior Removal	45	
Expansion of Removal Area	NA	Exterior Clearance Two soil samples collected.
Exterior Clearance	35	
Exterior Backfill	3	Personnel Air Monitoring NA
Exterior Restoration	2	
Interior Design-Build BD#:	NA	Perimeter Air Monitoring One sample collected.
Interior Containment BD#:	NA	
Interior Bulk Removal BD#:	NA	Clean Room Sampling NA
Interior Detail Cleaning BD#:	NA	
Interior Encapsulation BD#:	NA	
Interior Blocking BD#:	NA	
Interior Spot Cleaning BD#:	NA	
Interior Clearance BD#::	NA	
Interior Restoration BD#:	NA	
Interior Capping BD#:	NA	(CONCRETE / POLY?)

SAFETY: (Include Observances and any Infractions of Approved Safety Plan (i.e., PPE), Safety Manual or Instructions from Government Personnel. Specify Corrective Action Taken.)

No health and safety infractions observed.

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES

Note Times With Each Comment

(Results of QA Inspections / Tests / Deficiencies Observed / Actions Taken / Corrective Actions Taken by the Contractor / Disagreements with Contractor / Verbal Instructions to Contractors (Include Personnel) / Direction from Government Personnel)

Interior Activities

NA

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	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/11/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES CONT.:
Note Times With Each Comment

Excavation /Restoration Activities

0637 J. Bache (ER) called to report that ER restoration was on site continuing to spread the thin layer of structural fill on the northern end of area A. **0638** M. Kvapil (ER QC) reported that ER is on site continuing with removal. **0735** Calibrated the MiniRae2000 PID ID#04450. Calibrated at 97ppm with 100ppm isobutylene. **0846** K. Beaudoin (CDM) on site. Held a tailgate meeting with M. Kvapil. ER has one operator, two laborers, and one QC person at the site. ER is continuing with the removal in the western portion of the area A with a Case CX160B excavator. A. Vivian (CDM) and M. Pritula (CDM) on site to conduct ambient air monitoring and collect headspace readings from the cut lines of the excavation with a MiniRae2000 PID for VOC's. No VOC's observed in the ambient air where ER is conducting removal. Restoration has left the site. ER has spread structural fill over orange fencing on the northern end of area A. Structural fill is ~4-6" in thickness. A. Vivian reported that no detectable VOC's are in the ambient air. **0917** A. Vivian collected the first headspace reading from the cut line where ER is conducting removal. First headspace: 566ppm. **0918** TQA notified D. Repine (CDM). D. Repine informed TQA to have the removal crew stop removal in that location and start in a different part of area A. **0923** TQA informed QC and the operator that VOC's were observed where excavation is being conducted. TQA asked ER to move to a different location in area A. ER moved to the west edge of area A. ER dug a test pit prior to starting removal. CDM collected a headspace reading from the test pit. Headspace reading was reported as 1601ppm. ER moved south in the western part of area A and started digging test pits to see if there area any areas where VOC's are not present. CDM collecting headspace readings from the test pits. **0953** Off site to get more mason jars for headspace readings. **1011** On site. ER has dug test pits throughout the southern end of area A. A. Vivian is reporting that VOC's are being observed in all of the test pits. Removal is on hold until management (CDM, PRI, can make a decision on what level of VOC's **1105** All but one truck has left the site. **1110** D. Repine reported that per the EPA that soil can be excavated from area A if it does not contain visible staining from a petroleum like product and if it <50ppm. The soil is to be separated at the mine site. If soil has visible staining or is >50ppm the soil will not be removed at this time. TQA informed QC of the EPA's request. **1135** ER started removal in the southeast corner of area A. Black soil observed ~12" BGS. TQA had A. Vivian pull a headspace reading from the black soil. A. Vivian reported that the back soil didn't have an oily feel to it and it could be charcoal. **1140** ER broke for lunch while waiting for the headspace results. **1146** Headspace reading of the black soil 11.2ppm. **1152** Off site. **1215** TQA spoke with D. Repine about the black soil with 11.2ppm. D. Repine informed TQA that the soil was okay to excavate. **1227** TQA informed QC that excavated could resume in the southeast corner of area A. **1458** On site. A. Vivian informed TQA that ER was excavating in the southeast corner of area A came across an area of black stained soil that felt "oily". A. Vivian collected a headspace reading. The reading resulted in 100ppm. A. Vivian informed the operator presences of VOC's in the soil. ER stopped the removal. ER started to deconn the Case. ER is coving the stockpiles on site with poly. **1515** M. Pritula on site to collect soil samples. **1547** Two soil samples collected. ER has stopped deconning the Case and has left containment for the day. **1553** End of day briefing with M. Kvapil. ER has removed ~160 yards of soil from the site. ER has completed the deconn of the Case and will be continuing with removal in the alley west of the site. Off site.

Are Correct Wetting and Tarping Procedures Being Utilized? YES (x) NO ( )

Excavation areas were being soaked. Trucks were being sprayed down.

Have Situations Developed at the Site Which Might Lead to Significant Deviations from the Removal Design?
(Please Note Additional Work Required) **YES (x) NO ( )**

High VOC readings have impacted the removal process at the site.

Change Order Form Signed by Property's Owner? **YES ( ) NO ( )**

Information on Causes for Delay and Extent of Delays (i.e. Weather, Equipment Inoperability, etc.)

The unknown petroleum like product found in the soil is causing a delay in the removal.

ITEMS DAMAGED DURING CONSTRUCTION ACTIVITIES: (Photo Document and Include any Corrective Actions Taken.)

NA

DELIVERABLES SUBMITTED TO PRI? **YES ( ) NO (x)**	**LIST DELIVERABLES:**

REMARKS: (Include Visitors to Project Site and any Other Miscellaneous Comments)

NA

INSPECTOR'S SIGNATURE	PRINTED NAME	DATE
	Kris Beaudoin	8/11/2011

THIRD PARTY QUALITY ASSURANCE REPORT (QAR) DAILY LOG OF CONSTRUCTION ACTIVITIES	TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF THE NEXT DAY'S WORK	
PROJECT: Libby Asbestos Site, Libby, MT	PROPERTY ADDRESS:	875 US Highway 2 OU5
	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/12/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01
REMOVAL CONTRACTOR: HFS/Project Resources, Inc.	Weather AM:	52 Degrees F. Sunny.
	Weather PM:	83 Degrees F. Mostly sunny light wind.

GUIDANCE DOCUMENT GOVERNING REMOVAL: RAWP Revision 3.0

ACTIVITY	PERCENT COMPLETE AT END OF DAY	SAMPLES COLLECTED
Staging and Pre-Construction Set-Up	100	Interior Clearance BD# : NA
Exterior Removal	37	
Expansion of Removal Area	NA	Exterior Clearance Two soil samples collected.
Exterior Clearance	40	
Exterior Backfill	10	Personnel Air Monitoring NA
Exterior Restoration	5	
Interior Design-Build BD#:	NA	Perimeter Air Monitoring NA
Interior Containment BD#:	NA	
Interior Bulk Removal BD#:	NA	Clean Room Sampling NA
Interior Detail Cleaning BD#:	NA	
Interior Encapsulation BD#:	NA	
Interior Blocking BD#:	NA	
Interior Spot Cleaning BD#:	NA	
Interior Clearance BD#::	NA	
Interior Restoration BD#:	NA	
Interior Capping BD#:	NA	(CONCRETE / POLY?)

SAFETY: (Include Observances and any Infractions of Approved Safety Plan (i.e., PPE), Safety Manual or Instructions from Government Personnel. Specify Corrective Action Taken.)

No health and safety infractions observed.

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES

Note Times With Each Comment

(Results of QA Inspections / Tests / Deficiencies Observed / Actions Taken / Corrective Actions Taken by the Contractor / Disagreements with Contractor / Verbal Instructions to Contractors (Include Personnel) / Direction from Government Personnel)

Interior Activities

NA

THIRD PARTY QUALITY ASSURANCE REPORT (QAR) DAILY LOG OF CONSTRUCTION ACTIVITIES	TO BE SUBMITTED PRIOR TO THE COMMENCEMENT OF THE NEXT DAY'S WORK	
PROJECT: Libby Asbestos Site, Libby, MT	PROPERTY ADDRESS:	875 US Highway 2 OU5
	GEOUNIT	5730
	PROPERTY ID:	AD-000686
THIRD PARTY INDEPEDNENT CONTRACTOR: CDM Federal Programs Corporation	REPORT DATE:	8/12/2011
	CONTRACT NUMBER:	W912DQ-08-D-0018 DK01 USACE Task Order No. DK01

COMMENTS PERTAINING TO CONTRACTOR'S ACTIVITIES CONT.:
Note Times With Each Comment

Excavation /Restoration Activities

0755 K. Beaudoin (CDM) on site. Held a tailgate meeting with J. Bache (ER QC). ER has one operator at the site. ER is dumping structural fill at the site. ER has a Bobcat T650 skid steer at the site. ER is going to place orange fencing over the areas have had been sampled and then will spread an ~6" layer of structural fill over the fencing. TQA informed QC of the areas that been sampled that could be restored. **0832** Off site. **1112** On site. ER continues with restoration in the northern half of area A. ER continues to spread structural fill over the orange fencing. ER had one laborer in level C placing the orange fencing on the bottom of the excavation. ER is placing structural fill along the east and west sidewalls on the northern end of area A. ER has liner over the sidewalls to prevent cross contamination. ER is setting up on area B preparing for removal in the area. ER while excavating on Lincoln County alley 61 placed ~3 yards of material on the southwestern end of the site because ER could not load the trucks with the utility pole and overhead utilities that are on the site. **1127** The removal crew is on site and starting removal on the west end of area B with the Case. **1132** Off site. **1422** On site. ER continues with removal in area B excavating east through the area. Area B is being excavated to 12" BGS. TQA had A. Vivian (CDM) conduct headspace reading on the soil area B. **1404** A. Vivian informed TQA that the soil had a PID reading of 15.2ppm. TQA informed A. Vivian that removal could continue in area B. ER has one laborer compacting the structural fill spread in the north end of area A with a Bomag roller. **1436** Off site. **1600** A. Vivian on site to collect soil samples. A. Vivian informed TQA that the soil sample collected in area B2 was combined with area B2A from the site Lincoln County Alley 61 AD-005785 as directed by N. Pisciotta (CDM). **1619** End of day briefing with M. Kvapil. ER has removed ~88 yards of soil from the site. Removal will continue on 8-15-11. **1627** On site. ER has completed removal in area B. ER started restoration in area B spreading common fill ER has one operator, one Forman, and one laborer working on the restoration of area B. **1716** ER has spread 8" of common fill through out area B. ER is placing cones and caution tape along the road side of area B. ER is rolling the edges of the common fill in area B with a Bomag roller. **1718** Off site.

Are Correct Wetting and Tarping Procedures Being Utilized? YES (x) NO ( )

Excavation areas were being soaked.

Have Situations Developed at the Site Which Might Lead to Significant Deviations from the Removal Design?
(Please Note Additional Work Required) **YES ( ) NO (x)**

Change Order Form Signed by Property's Owner? **YES ( ) NO ( )**

Information on Causes for Delay and Extent of Delays (i.e. Weather, Equipment Inoperability, etc.)

NA

ITEMS DAMAGED DURING CONSTRUCTION ACTIVITIES: (Photo Document and Include any Corrective Actions Taken.)

A water line was broken in area B. **1630** The water line has been repaired by ER.

DELIVERABLES SUBMITTED TO PRI? **YES ( ) NO (x)**	**LIST DELIVERABLES:**

REMARKS: (Include Visitors to Project Site and any Other Miscellaneous Comments)

NA

INSPECTOR'S SIGNATURE	**PRINTED NAME**	**DATE**
	Kris Beaudoin	8/12/2011

Appendix B
Laboratory Results

Receipt of Samples

CompuChem
A Division Of
Liberty Analytical Corp.

Client: CDM FEDERAL PROGRAMS CORP.
Project: LIBBY OU4FIELD/MT-TCLP-7DAY
Contact: PAUL LAMMERS
PM: Matt Howard
Phone:
Email: lammersmp@cdm.com
Work Order: 1108090, 1108091

Work #	Client ID	Lab ID	Sample Type	Analysis	Matrix	Sample Date	Receive Date	Due Date	TAT
1108090	1R-45009	1108090-01	Field Sample	6010C METALS-TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	7470A Hg TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	GC-8081B PEST TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	GC-8151A-HERBICIDE-TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	SVOC 8270D TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	TCLP-ZHE	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108090	1R-45009	1108090-01	Field Sample	VOA-8260B TCLP	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108091	1R-45009	1108091-01	Field Sample	CORROSIVITY 9040B	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108091	1R-45009	1108091-01	Field Sample	IGNITABILITY 1010A	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108091	1R-45009	1108091-01	Field Sample	REACTIVE CYANIDE 9014	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108091	1R-45009	1108091-01	Field Sample	REACTIVE SULFIDE 9034	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7
1108091	1R-45009	1108091-01	Field Sample	Solids, Dry Weight	Soil	8/18/2011 0:00:00	8/19/2011 9:55:00	8/26/11	7

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-02	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.50c SN00015 (IR GUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen - CDM	8/18/11	[signature]	8/19/11	0955						

WORK ORDER

Printed: 8/19/2011 18:55:08

1108090

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	**Received**

Report To:

CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:

CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?: **NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

CompuChem
A Division Of
Liberty Analytical Corp.
8/29/2011

PAUL LAMMERS
CDM FEDERAL PROGRAMS CORP.
60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem
a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Laboratory: COMPUCHEM

SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01

I certify that this data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Ken Grzybowski

Date: 8-29-11 Title: Lab Dir

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100Fax: 919/379-4050

SDG NARRATIVE
SDG # 1108090
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: 1R-45009

The 1 soil sample listed above was received intact, refrigerated at 0.5°C, with proper documentation, in sealed shipping containers, on August 19, 2011. SW-846, 3rd Edition, Update 4, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8151A were used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices are included in the sample data sections.

Herbicide:

Extraction and analysis holding time requirements were met for sample.

No target analytes were confirmed in the sample.

Manual integrations were not performed on any of the process files associated with this SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All surrogate recoveries were within the method specified limits.

The method blank associated with the samples met all quality control criteria.

The Laboratory Control Sample (LCS) prepared and analyzed along with the sample met all accuracy and precision criteria.

Duplicate matrix spikes were performed with sample 1R-45009, and met all recovery and precision criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and/or in the computer-readable data submitted electronically has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
Director of Laboratory Operations
August 29, 2011

GC and GC/MS Column and Trap Specifications Table

SDG #:	1108090

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (µm)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-5MS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.25	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	Restek	Rxi-5Sil MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Pinnacle II Biphenyl	4.6	5.0	15 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 31

*** This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semivolatiles, pesticides, and Aroclors by the requested analytical methods. Please see the SDG Narrative(s) for the specific fraction(s) relative to this SDG.**

Note: This table also contains HPLC columns.

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC/HPLC chemists. An Extracted Ion Current Profile (EICP) or a GC/HPLC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC/HPLC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak. The most common reasons for performing manual integrations/editing are: the compound was not found by the automatic integration routine, the compound was incorrectly integrated by the automatic integration routine, and the co-eluting compounds were incorrectly integrated by the automatic integration routine

H - Denotes that the data reviewer, GC/MS operator, or GC/HPLC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate GC/MS library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

These codes will appear in the GC/MS and GC/HPLC raw data.

Revision 8 (01/29/2011)

DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on the appropriate reporting form for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches $\geq$ 85%), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the lower of the two values is reported and flagged with a P on the reporting form. When the RPD is equal to or less than 40%, our policy is to also report the lower of the two values, although the choice could be a project specific issue. These SW-846 policies are consistent with Method 8000C. If Method 8000B is required, the higher of the two values is reported. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on the appropriate reporting form for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the appropriate reporting form for the more diluted sample, and **all** reported concentrations on that form are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate reporting forms are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single reporting form.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor. The "S" flag is not utilized for non CLP analyses.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Page 1 of 1

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-04	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.50c SN00150RGUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D Haugen CDM	8/18/11	[illegible]	8/19/11	0955						

1108090

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H25001
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A 7471B Mercury	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H24015
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
Solids, Dry Weight	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	For 7470A 7471B Mercury in Sequence 1I
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)
1108090-02 ZHEBLKDY [Soil] Sampled 08/19/2011 00:00 Eastern				**ZHE BLANK**	
TCLP-ZHE	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

Norma Dwight
Assigned To

1151 2693
Employee ID Number

D:8/24

PREPARATION BENCH SHEET

1082213

GC-8151A-HERBICIDE-TCLP // GC-8151A-HERBICIDE-TCLP DOD

Matrix: Soil

Prepared using: GC - TCLP by 3510_GC

Date/Time Extracted: 8/23/11 / 1720

8-24.4

Lab Number	Client ID	QCType	Initial (mL)	Final (uL)	Adjusted pH BASE	Adjusted pH ACID	QC	Surr (uL)	Comments
1082213-BLK1	PBLKEA	Blank	500	5000	14	0.3	N/A	500	
1082213-BLK2	TCLPBLKDW	Blank	100		14	0.3		500	
1082213-BS1	PEALCS	LCS	100		14	0.3		500	
1082213-BSD1	PEALCSD	LCS Dup	100		14	0.3		500	
1082213-MS1	1R-45009MS	Matrix Spike	100		14	0.3		500	
1082213-MSD1	1R-45009MSD	Matrix Spike Dup	100		14	0.3	↓	500	
1108090-01	1R-45009	Sample	100		14	0.3	QC	500	
1108095-01	IDWA	Sample	100		14	0.3	N/A	500	
1108095-02	IDWB	Sample	100	↓	14	0.3	↓	500	

	Description	Spike Amount (uL)		Lot Number
SURROGATE	NSI 445 Herb Surrogate Q4731	500		1G08001
SPIKE	NSI TCLP HERBICIDE SPIKE Q-65	200	LCS/LCSD	0I27003
SPIKE	NSI TCLP HERBICIDE SPIKE Q-65	200	MS/MSD	0I27003

Surrogate & Spike Added By: BFP 8-23-11
Initials / Date

Spiking Witnessed By: DD 8-23-11
Initials / Date

Final Vol Verified:

Reviewed By: B. Patton

Analysts Initials: Extracted: [illegible] KD: [illegible] N2: [illegible] Bottled up: [illegible]

Derivatization By: [illegible] Derivatization Date: 8/24/11

Acid: Mason: 2XX10-762-1 Diazomethane 2XX10-763 770.1 Methanol: CV538 Isooctane: CY130 C6H14: 75773 Ether: DE478

Manuf. and lot # of reagents/solvents used: NaCl: 77677 6N HCl: 2XX10-734-2 Citric: J47504 H2SO4: 2XX10-755-2

10

Billy
Assigned To

2713
Employee ID Number

PREPARATION BENCH SHEET

1082207

TCLP

Matrix: Soil

Prepared using: EXTRACTIONS - EPA 1311

Date/Time Extracted: 8-22-11 @ 1650

11

Lab Number	Client ID	QCType	Pre-Test				Particle Reduct. Done (Y/N)	Sample Weight (g)	Final Leach pH Value	Final Volume (mL)	Percent Solid	Comments
					Extration Fluid and Vol. Added							
			Start	Final	1	2						
1082207-BLK1	TCLPBLKDW	Blank	N/A	N/A	2000	N/A	N/A	N/A	4.92	1950	N/A	
1108090-01	1R-45009	~~Bef. 2nd~~ Sample	7.45 ~~6.94~~	2.67	2000	N/A	N	100.0	4.92	2900	100%	
1108095-01	IDWA	Sample	6.94	2.74	2000	N/A	N	100.0	4.92	1450	100%	
1108095-02	IDWB	Sample	6.88	2.70	2000	N/A	N	100.0	4.93	1500	100%	

Ran additional leachate to have enough for MS+MSD extractions

LOADED TUMBLER CALIB.CHECK (MUST BE 30 +/- 2 RPM)	
TUMBLER #	CALC. RPM
2A	31
(COUNT RPM FOR 30 SEC. AND MULTIPLY NUMBER BY 2 TO CALCULATE RPM)	

ROTATION TIME ONLY

Date/Time Started: 8-22-11 1650

Date/Time Stopped: 8-23-11 0855

Room Temp: Min 23° Max 24°

Balance ID: Sart. BL-310

Enter Volume (mL) of Extraction Fluid added into appropiate column, e.g., enter volume into column 1 if EXT Fluid #1 is used. Ensure that the fluid volume to sample weight ration is 20:1.

Ext Fluid 1 pH: 4.94 (4.93 +/- 0.05)

Ext Fluid 2 pH: N/A (2.88 +/- 0.05)

Final Vol Verified:

Reviewed By: DDR

Filter Manufacturer: Env. Express Filter Lot: 0045001

Manuf. and lot # of reagents/solvents used: 1 N HCL - 2XX9-718-2 Extraction Fluid I - 2X10-769-1

EXTRACT COC

1082213

COMPUCHEM

Prepared using: GC - TCLP by 3510_GC 8-24-4

Matrix: Soil

Lab Number	Client ID	Analysis
1082213-BLK1	PBLKEA	QC
1082213-BLK2	TCLPBLKDW	QC
1082213-BS1	PEALCS	QC
1082213-BSD1	PEALCSD	QC
1082213-MS1	1R-45009MS	QC
1082213-MSD1	1R-45009MSD	QC
1108090-01	1R-45009	GC-8151A-HERBICIDE-TCLP
1108090-01	1R-45009	GC-8151A-HERBICIDE-TCLP DOD
1108095-01	IDWA	GC-8151A-HERBICIDE-TCLP DOD
1108095-02	IDWB	GC-8151A-HERBICIDE-TCLP DOD

Relinquished By	Date	Received By	Date
[signature]	8/24/11 1730	GC Refrig #3	8/24/11 1730
Refrig #3	8/25/2011 815	AMP	8/25/2011 815
AMP	8/25/2011 820	Refrig #4	8/25/2011 8[illegible]
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

ANALYSIS DATA SHEET

8151A

1R-45009

Client: CDM FEDERAL PROGRAMS SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510_G(File ID: 031e1108090-01.d Sampled: 08/18/11 00:00

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1108090-01 Received: 08/19/11 09:55

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 21:09

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
94-75-7	2,4-D		6.8	10	U
93-72-1	2,4,5-TP (Silvex)		1.2	2.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	512.5	103	50 - 148	
DCAA [2C]	500.0	469.8	94	50 - 148	

* Values outside of QC limits

ANALYSIS DATA SHEET

8151A

PBLKEA

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 025e1082213-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BLK1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 18:12

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D		1.4	2.0	U
93-72-1	2,4,5-TP (Silvex)		0.24	0.40	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	100.0	142.7	143	50 - 148	

ANALYSIS DATA SHEET

8151A

PBLKEA

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 025e1082213-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BLK1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 18:12

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]		1.4	2.0	U
93-72-1	2,4,5-TP (Silvex) [2C]		0.24	0.40	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	100.0	123.4	123	50 - 148	

ANALYSIS DATA SHEET

8151A

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 026e1082213-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BLK2 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 18:41

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D		6.8	10	U
93-72-1	2,4,5-TP (Silvex)		1.2	2.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	555.5	111	50 - 148	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8151A

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 026e1082213-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BLK2 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 18:41

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]		6.8	10	U
93-72-1	2,4,5-TP (Silvex) [2C]		1.2	2.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	500.0	563.3	113	50 - 148	

ANALYSIS DATA SHEET

8151A

PEALCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 027e1082213-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 19:11

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D	43.07	6.8	10	
93-72-1	2,4,5-TP (Silvex)	8.097	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	509.2	102	50 - 148	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8151A

PEALCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 027e1082213-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 19:11

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]	50.43	6.8	10	
93-72-1	2,4,5-TP (Silvex) [2C]	9.082	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	500.0	493.2	99	50 - 148	

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ANALYSIS DATA SHEET

8151A

PEALCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 028e1082213-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 19:40

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D	48.86	6.8	10	
93-72-1	2,4,5-TP (Silvex)	9.004	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	573.3	115	50 - 148	

ANALYSIS DATA SHEET

8151A

PEALCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 028e1082213-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-BSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 19:40

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]	57.74	6.8	10	
93-72-1	2,4,5-TP (Silvex) [2C]	9.927	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	500.0	540.5	108	50 - 148	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8151A

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 029e1082213-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-MS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 20:10

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D	50.00	6.8	10	
93-72-1	2,4,5-TP (Silvex)	9.219	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	581.3	116	50 - 148	

Environmental Testing Laboratories

CompuChem

A Division Of

Liberty Analytical Corp.

ANALYSIS DATA SHEET

8151A

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 029e1082213-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-MS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 20:10

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]	55.81	6.8	10	
93-72-1	2,4,5-TP (Silvex) [2C]	10.00	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	500.0	530.5	106	50 - 148	

ANALYSIS DATA SHEET

8151A

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 030e1082213-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-MSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 20:39

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D	51.35	6.8	10	
93-72-1	2,4,5-TP (Silvex)	8.776	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA	500.0	555.6	111	50 - 148	

ANALYSIS DATA SHEET

8151A

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 030e1082213-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082213-MSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 17:20

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/27/11 20:39

Batch: 1082213 Sequence: 1H29016 Calibration: 1082903 Instrument: agilent92

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
94-75-7	2,4-D [2C]	61.19	6.8	10	
93-72-1	2,4,5-TP (Silvex) [2C]	9.986	1.2	2.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCAA [2C]	500.0	547.9	110	50 - 148	

PREPARATION BATCH SUMMARY

8151A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082213 Matrix: Water Preparation: TCLP by 3510_GC

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (uL)
PBLKEA	1082213-BLK1	08/23/11 17:20	500	5000
TCLPBLKDW	1082213-BLK2	08/23/11 17:20	100	5000
PEALCS	1082213-BS1	08/23/11 17:20	100	5000
PEALCSD	1082213-BSD1	08/23/11 17:20	100	5000
1R-45009MS	1082213-MS1	08/23/11 17:20	100	5000
1R-45009MSD	1082213-MSD1	08/23/11 17:20	100	5000
1R-45009	1108090-01	08/23/11 17:20	100	5000

LCS / LCS DUPLICATE RECOVERY

8151A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082213-BS1 Matrix: Water Client ID: PEALCS Batch: 1082213

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
2,4-D	50.00	43.07	86		50 - 150
2,4-D [2C]	50.00	50.43	101		50 - 150
2,4,5-TP (Silvex)	10.00	8.097	81		50 - 150
2,4,5-TP (Silvex) [2C]	10.00	9.082	91		50 - 150

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
2,4-D	50.00	48.86	98	13	40		50 - 150
2,4-D [2C]	50.00	57.74	115	14	40		50 - 150
2,4,5-TP (Silvex)	10.00	9.004	90	11	40		50 - 150
2,4,5-TP (Silvex) [2C]	10.00	9.927	99	9	40		50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8151A

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082213-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
2,4-D	50.00	10 U	50.00	100		50 - 150
2,4,5-TP (Silvex)	10.00	2.0 U	9.219	92		50 - 150

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
2,4-D	50.00	51.35	103	3		40	50 - 150
2,4,5-TP (Silvex)	10.00	8.776	88	5		40	50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8151A

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082213-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
2,4-D [2C]	50.00	10 U	55.81	112		50 - 150
2,4,5-TP (Silvex) [2C]	10.00	2.0 U	10.00	100		50 - 150

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
2,4-D [2C]	50.00	61.19	122	9		40	50 - 150
2,4,5-TP (Silvex) [2C]	10.00	9.986	100	0.2		40	50 - 150

SURROGATE STANDARD RECOVERY

8151A

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: agilent92

Sequence: 1H29016 Calibration: 1082903

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Blank (1082213-BLK1) ug/L Lab File ID: 025e1082213-B Analyzed: 08/27/11 18:12				
DCAA	100.0	143	50 - 148	
DCAA [2C]	100.0	123	50 - 148	
Blank (1082213-BLK2) ug/L Lab File ID: 026e1082213-B Analyzed: 08/27/11 18:41				
DCAA	500.0	111	50 - 148	
DCAA [2C]	500.0	113	50 - 148	
LCS (1082213-BS1) ug/L Lab File ID: 027e1082213-B Analyzed: 08/27/11 19:11				
DCAA	500.0	102	50 - 148	
DCAA [2C]	500.0	99	50 - 148	
LCS Dup (1082213-BSD1) ug/L Lab File ID: 028e1082213-B Analyzed: 08/27/11 19:40				
DCAA	500.0	115	50 - 148	
DCAA [2C]	500.0	108	50 - 148	
Matrix Spike (1082213-MS1) ug/L Lab File ID: 029e1082213-M Analyzed: 08/27/11 20:10				
DCAA	500.0	116	50 - 148	
DCAA [2C]	500.0	106	50 - 148	
Matrix Spike Dup (1082213-MSD1) ug/L Lab File ID: 030e1082213-M Analyzed: 08/27/11 20:39				
DCAA	500.0	111	50 - 148	
DCAA [2C]	500.0	110	50 - 148	
1R-45009 (1108090-01) ug/L Lab File ID: 031e1108090-0 Analyzed: 08/27/11 21:09				
DCAA	500.0	103	50 - 148	
DCAA [2C]	500.0	94	50 - 148	

CompuChem

A Division Of

Liberty Analytical Corp.

8/29/2011

PAUL LAMMERS

CDM FEDERAL PROGRAMS CORP.

60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.
Project: LIBBY OU4FIELD/MT-TCLP-7DAY
Laboratory: COMPUCHEM
SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 9/25/11 Title: Lab Dir

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 1108090
Client: **CDM FEDERAL PROGRAMS CORP.**
Project: **LIBBY OU4FIELD/MT-TCLP-7DAY**

The indicated Sample Delivery Group (SDG) consisting of one (1) sample was received into the laboratory information management system (LIMS) on August 19, 2011 intact and in good condition with the Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The cooler temperature indicator bottle was found with the sample and the sample's temperature was 0.5 degrees Celsius. Temperature was recorded by IR temperature gun.

The sample was prepared following the TCLP leaching procedure and analyzed in accordance with SW846/6010C/7470A methodology for the requested TCLP metals and mercury.

EQUATIONS FOR LIQUID SAMPLE CALCULATIONS:

Equation for obtaining metals sample results in ug/L as presented on Analysis Data Sheet data sheets from ICP instrument acquired results in µg/L (ppb).

$$\frac{C \times F}{I}$$

Where

C = concentration (ug/L)

F = final volume in liters after sample preparation

I = initial volume in liters

Example: Barium in sample 1R-45009

$$\frac{763.8283\ \mu g/L\ (C) \times 0.05\ L\ (F)}{0.05\ L\ (I)} = 763.8\ ug/L \text{ reported as } 764\ J\ ug/L$$

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB, & CCB) associated with this data were confirmed to be within SW-846 methodology.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, LCSWD, & PBW) were found to be within acceptable ranges and the field sample was prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The ICP sample matrix spike, CCN = 1082322-MS1 (IR-45009S) was found to be inside control limits.

The mercury sample matrix spike, CCN = 1082323-MS1 (IR-45009S) was found to be inside control limits.

The ICP sample matrix duplicate spike, CCN = 1082322-MSD1 (IR-45009SD) was found to be inside control limits.

The mercury sample matrix duplicate spike, CCN = 1082323-MSD1 (IR-45009SD) was found to be inside control limits.

The ICP sample duplicate, CCN = 1082322-DUP1 (IR-45009D) was found to be inside control limits.

The mercury sample duplicate, CCN = 1082323-DUP1 (IR-45009D) was found to be inside control limits.

A five-fold serial dilution of sample, CCN = SDI1108090-01 (IR-45009L) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentration was inside control limits except arsenic and selenium.

The ICP sample post digestion spike, CCN =1082322-PS1 (IR-45009A) was performed and passed criteria.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W. Bass
Senior Chemist
August 25, 2011

INORGANIC DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, CCV, and interference check standards for ICP-AES/ICP-MS) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

The extensions: D, S, SD, L, and A are added to the end of the Client ID and represent the following:

D – Matrix Duplicate
S – Matrix Spike
SD – Matrix Spike Duplicate
L – Serial Dilution
A – Post Digestion Spike

Revision 0 (11-09-2010)

ANALYSIS DATA SHEET

1R-45009

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1108090-01 % Solid: Matrix: Soil Sampled: 08/18/11 Received: 08/19/11

CAS NO.	Analyte	Conc. (ug/L)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
7440-38-2	Arsenic	5.01	1.06	2500	1	J	EPA 6010C	1H25001	8/24/11 15:07
7440-39-3	Barium	764	0.370	50000	1	J	EPA 6010C	1H25001	8/24/11 15:07
7440-43-9	Cadmium		0.116	500	1	U	EPA 6010C	1H25001	8/24/11 15:07
7440-47-3	Chromium	5.15	0.334	2500	1	J	EPA 6010C	1H25001	8/24/11 15:07
7439-92-1	Lead	1.78	1.08	2500	1	J	EPA 6010C	1H25001	8/24/11 15:07
7439-97-6	Mercury		0.0355	200	1	U	EPA 7470A	1H24015	8/24/11 15:51
7782-49-2	Selenium	10.6	3.55	500	1	J	EPA 6010C	1H25001	8/24/11 15:07
7440-22-4	Silver		0.705	500	1	U	EPA 6010C	1H25001	8/24/11 15:07

BLANKS

EPA 7470A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Sequence: 1H24015 Instrument ID: V4

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
ICB	1H24015-ICB1	Mercury	-0.0850	0.0355	200	ug/L	J	EPA 7470A
CCB	1H24015-CCB1	Mercury	-0.0600	0.0355	200	ug/L	J	EPA 7470A
PBS	1082323-BLK1	Mercury	0.0640	0.0355	200	ug/L	J	EPA 7470A
TCLPBLKDW	1082323-BLK2	Mercury	-0.0440	0.0355	200	ug/L	J	EPA 7470A
CCB	1H24015-CCB2	Mercury	-0.107	0.0355	200	ug/L	J	EPA 7470A

BLANKS

EPA 6010C

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Sequence: 1H25001 Instrument ID: P3

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
ICB	1H25001-ICB1	Arsenic	-0.528	1.06	2500	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Barium	-0.153	0.370	50000	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Cadmium	0.0261	0.116	500	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Chromium	0.0684	0.334	2500	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Lead	0.151	1.08	2500	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Selenium	-1.82	3.55	500	ug/L	U	EPA 6010C
ICB	1H25001-ICB1	Silver	-0.188	0.705	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB1	Arsenic	-0.0649	1.06	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB1	Barium	-0.309	0.370	50000	ug/L	U	EPA 6010C
CCB1	1H25001-CCB1	Cadmium	-0.120	0.116	500	ug/L	J	EPA 6010C
CCB1	1H25001-CCB1	Chromium	-0.776	0.334	2500	ug/L	J	EPA 6010C
CCB1	1H25001-CCB1	Lead	0.413	1.08	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB1	Selenium	-0.837	3.55	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB1	Silver	-1.19	0.705	500	ug/L	J	EPA 6010C
PBW	1082322-BLK1	Arsenic	-1.60	1.06	2500	ug/L	J	EPA 6010C
PBW	1082322-BLK1	Barium		0.370	50000	ug/L	U	EPA 6010C
PBW	1082322-BLK1	Cadmium		0.116	500	ug/L	U	EPA 6010C
PBW	1082322-BLK1	Chromium		0.334	2500	ug/L	U	EPA 6010C
PBW	1082322-BLK1	Lead	1.25	1.08	2500	ug/L	J	EPA 6010C
PBW	1082322-BLK1	Selenium		3.55	500	ug/L	U	EPA 6010C
PBW	1082322-BLK1	Silver		0.705	500	ug/L	U	EPA 6010C
TCLPBLKDW	1082322-BLK2	Arsenic	2.80	1.06	2500	ug/L	J	EPA 6010C
TCLPBLKDW	1082322-BLK2	Barium	2.48	0.370	50000	ug/L	J	EPA 6010C
TCLPBLKDW	1082322-BLK2	Cadmium		0.116	500	ug/L	U	EPA 6010C
TCLPBLKDW	1082322-BLK2	Chromium	1.29	0.334	2500	ug/L	J	EPA 6010C
TCLPBLKDW	1082322-BLK2	Lead	1.93	1.08	2500	ug/L	J	EPA 6010C
TCLPBLKDW	1082322-BLK2	Selenium	7.84	3.55	500	ug/L	J	EPA 6010C
TCLPBLKDW	1082322-BLK2	Silver	1.12	0.705	500	ug/L	J	EPA 6010C
CCB1	1H25001-CCB2	Arsenic	-0.446	1.06	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Barium	-0.118	0.370	50000	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Cadmium	0.0199	0.116	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Chromium	0.0239	0.334	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Lead	0.665	1.08	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Selenium	-0.581	3.55	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB2	Silver	0.152	0.705	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB3	Arsenic	-0.0775	1.06	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB3	Barium	-0.0287	0.370	50000	ug/L	U	EPA 6010C
CCB1	1H25001-CCB3	Cadmium	0.0814	0.116	500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB3	Chromium	-0.105	0.334	2500	ug/L	U	EPA 6010C
CCB1	1H25001-CCB3	Lead	-0.140	1.08	2500	ug/L	U	EPA 6010C

BLANKS

EPA 6010C

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Sequence: 1H25001 Instrument ID: P3

Client ID	Lab Sample ID	Analyte	Found	MDL	RL	Units	Q	Method
CCB1	1H25001-CCB3	Selenium	-1.31	3.55	500	ug/L	*U*	EPA 6010C
CCB1	1H25001-CCB3	Silver	-0.476	0.705	500	ug/L	*U*	EPA 6010C

DUPLICATES
EPA 6010C

1R-45009D

Client: CDM FEDERAL PROGRAMS CORJ SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082322-DUP1 % Solid: Matrix: Soil Lab Source ID:1108090-01 Source Sample: 1R-45009

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Arsenic	20	*5.01 J*	4.93 J	1.48		EPA 6010C
Barium	20	*764 J*	753 J	1.38		EPA 6010C
Cadmium	20	*500 U*	500 U			EPA 6010C
Chromium	20	*5.15 J*	4.61 J	11.1		EPA 6010C
Lead	20	*1.78 J*	2.37 J	28.6		EPA 6010C
Selenium	20	*10.6 J*	8.64 J	20.1		EPA 6010C
Silver	20	*500 U*	500 U			EPA 6010C

DUPLICATES
EPA 7470A

1R-45009D

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082323-DUP1 % Solid: Matrix: Soil Lab Source ID:1108090-01 Source Sample: 1R-45009

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Mercury	20	*200 U*	200 U			EPA 7470A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

1R-45009S

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082322-MS1 % Solid: Matrix: Soil Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Arsenic	5000	5.01 J	4560	91.1		75 - 125
Cadmium	1000	500 U	919	91.9		75 - 125
Chromium	5000	5.15 J	4660	93.0		75 - 125
Lead	5000	1.78 J	4540	90.8		75 - 125
Selenium	1000	10.6 J	958	94.7		75 - 125
Silver	1000	500 U	914	91.3		75 - 125

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Arsenic	5000	4570	91.3	0.254		20	75 - 125
Cadmium	1000	922	92.2	0.345		20	75 - 125
Chromium	5000	4670	93.3	0.318		20	75 - 125
Lead	5000	4590	91.7	0.925		20	75 - 125
Selenium	1000	975	96.4	1.76		20	75 - 125
Silver	1000	915	91.4	0.0477		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

1R-45009S

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082322-MS2 % Solid: Matrix: Soil Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Barium	100000	764 J	89800 JD	89.0		75 - 125

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Barium	100000	94400 JD	93.7	5.09		20	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 7470A

1R-45009S

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082323-MS1 % Solid: Matrix: Soil Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	200.0	200 U	200 JD	100		75 - 125

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Mercury	200.0	199 JD	99	0.4		200	75 - 125

SERIAL DILUTION

EPA 6010C

1R-45009L

Client: CDM FEDERAL PROGRAMS CORP SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1H25001-SRD1 Matrix: Soil Lab Source ID: 1108090-01 Source Sample: 1R-45009

Sequence: 1H25001 Dilution: 5

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Arsenic	5.01 J	4.32	13.7	*	EPA 6010C	10
Barium	763.83 J	770.77 J	0.909		EPA 6010C	10
Cadmium	500.00 U	2500.00 U			EPA 6010C	10
Chromium	5.15 J	4.82 J	6.38		EPA 6010C	10
Lead	1.78 J	12500.00 U			EPA 6010C	10
Selenium	10.57 J	6.99	33.8	*	EPA 6010C	10
Silver	500.00 U	2500.00 U			EPA 6010C	10

LCS / LCS DUPLICATE RECOVERY

EPA 6010C

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082322-BS1 Matrix: Soil Client ID: LCSW Batch: 1082322

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Arsenic	5000	4440	88.7		80 - 120
Cadmium	1000	920	92.0		80 - 120
Chromium	5000	4600	92.1		80 - 120
Lead	5000	4550	91.0		80 - 120
Selenium	1000	897	89.7		80 - 120
Silver	1000	888	88.8		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
Arsenic	5000	4360	87.3	1.64	20		80 - 120
Cadmium	1000	904	90.4	1.67	20		80 - 120
Chromium	5000	4530	90.6	1.63	20		80 - 120
Lead	5000	4490	89.8	1.25	20		80 - 120
Selenium	1000	885	88.5	1.28	20		80 - 120
Silver	1000	887	88.7	0.136	20		80 - 120

LCS / LCS DUPLICATE RECOVERY

EPA 6010C

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082322-BS2 Matrix: Soil Client ID: LCSW Batch: 1082322

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Barium	100000	88700 JD	88.7		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Barium	100000	89900 JD	89.9	1.38	20		80 - 120

LCS / LCS DUPLICATE RECOVERY

EPA 7470A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082323-BS1 Matrix: Soil Client ID: LCSS Batch: 1082323

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Mercury	200.0	203 JD	101		80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Mercury	200.0	199 JD	100	2	200		80 - 120

METHOD DETECTION AND REPORTING LIMITS

EPA 6010C

Laboratory: COMPUCHEM **SDG:** 1108090

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil **Instrument:** P3

Analyte	MDL	RL	Units	Method
Arsenic	1.06	2,500.00	ug/L	EPA 6010C
Barium	0.37	50,000.00	ug/L	EPA 6010C
Cadmium	0.116	500.00	ug/L	EPA 6010C
Chromium	0.334	2,500.00	ug/L	EPA 6010C
Lead	1.08	2,500.00	ug/L	EPA 6010C
Selenium	3.55	500.00	ug/L	EPA 6010C
Silver	0.705	500.00	ug/L	EPA 6010C

METHOD DETECTION AND REPORTING LIMITS

EPA 7470A

Laboratory: COMPUCHEM **SDG:** 1108090

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil **Instrument:** V4

Analyte	MDL	RL	Units	Method
Mercury	0.0355	200.00	ug/L	EPA 7470A

PREPARATION BATCH SUMMARY

EPA 6010C

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082322 Matrix: Soil Preparation: TCLP by EPA3010A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
PBW	1082322-BLK1	08/24/11 10:00	50.0	50.0
TCLPBLKDW	1082322-BLK2	08/24/11 10:00	50.0	50.0
LCSW	1082322-BS1	08/24/11 10:00	50.0	50.0
LCSW	1082322-BS2	08/24/11 10:00	50.0	50.0
LCSWD	1082322-BSD1	08/24/11 10:00	50.0	50.0
LCSWD	1082322-BSD2	08/24/11 10:00	50.0	50.0
1R-45009D	1082322-DUP1	08/24/11 10:00	50.0	50.0
1R-45009S	1082322-MS1	08/24/11 10:00	50.0	50.0
1R-45009S	1082322-MS2	08/24/11 10:00	50.0	50.0
1R-45009SD	1082322-MSD1	08/24/11 10:00	50.0	50.0
1R-45009SD	1082322-MSD2	08/24/11 10:00	50.0	50.0
1R-45009A	1082322-PS1	08/24/11 10:00	50.0	50.0
1R-45009	1108090-01	08/24/11 10:00	50.0	50.0

PREPARATION BATCH SUMMARY

EPA 7470A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082323 Matrix: Soil Preparation: EPA 7470A Prep

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
PBS	1082323-BLK1	08/24/11 10:00	100	100
TCLPBLKDW	1082323-BLK2	08/24/11 10:00	100	100
LCSS	1082323-BS1	08/24/11 10:00	100	100
LCSSD	1082323-BSD1	08/24/11 10:00	100	100
1R-45009D	1082323-DUP1	08/24/11 10:00	100	100
1R-45009S	1082323-MS1	08/24/11 10:00	100	100
1R-45009SD	1082323-MSD1	08/24/11 10:00	100	100
1R-45009	1108090-01	08/24/11 10:00	100	100

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-02	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.50c SN00150RGUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen, CDM	8/18/11	[signature]	8/19/11	0955						

WORK ORDER

1108090

Printed: 8/25/2011 7:50:07AM

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due: 08/26/2011 00:00 (7 day TAT)

Received By: Matt Howard — Date Received: 08/19/2011 09:55

Logged In By: Matt Howard — Date Logged In: 08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H25001
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A 7471B Mercury	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H24015
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
Solids, Dry Weight	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	For 7470A 7471B Mercury in Sequence 1I
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)
1108090-02 ZHEBLKDY [Soil] Sampled 08/19/2011 00:00 Eastern				**ZHE BLANK**	
TCLP-ZHE	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

CompuChem

A Division Of

Liberty Analytical Corp.

8/29/2011

PAUL LAMMERS

CDM FEDERAL PROGRAMS CORP.

60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Joan Pardee

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Laboratory: COMPUCHEM

SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 8-26-11 Title: LAB DIR

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 1108090
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: 1R-45009

The 1 soil sample listed above was received intact, refrigerated at 0.5°C, with proper documentation, in sealed shipping containers, on August 19, 2011. SW-846, 3rd Edition, Update 4, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081B were used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG # 1108090 included in the sample data sections.

The sample was prepped and analyzed within the method holding time criteria

Target analytes were present above the reporting limits in the sample.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The method blanks associated with the sample met all quality control criteria.

The associated Laboratory Control Samples (LCS) met overall accuracy criteria.

Duplicate matrix spikes were performed with sample 1R-45009, and met most recovery and precision criteria.

Manual integrations were performed on one or more of the process files associated with this SDG. Please see the detailed Manual Integration Summary report that is located behind this SDG narrative. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and/or in the computer-readable data submitted electronically has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
Director of Laboratory Operations
August 29, 2011

CompuChem
A Division Of
Liberty Analytical Corp.

Manual Integration Summary

Client: CDM FEDERAL PROGRAMS CORP.
Work Order: 1108090
Sdg: 1108090
Project: LIBBY OU4FIELD/MT-TCLP-7DAY
Case:

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-BS1 **Client Id:** PDZLCS
Sample Type: LCS
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M
Toxaphene		M
Toxaphene (1)		M

Sample Total: 3

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-BSD1 **Client Id:** PDZLCSD
Sample Type: LCS Dup
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-MS1 **Client Id:** 1R-45009MS
Sample Type: Matrix Spike
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-MSD1 **Client Id:** 1R-45009MSD
Sample Type: Matrix Spike Dup
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1H23014-CAL6 **Client Id:** TOXAPH1PA
Sample Type: Cal Standard
Instrument: tracegc84

Analyte	Type	M Flag
Toxaphene		M

Toxaphene (1)		M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL7 **Client Id:** TOXAPH2PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL8 **Client Id:** TOXAPH3PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL9 **Client Id:** TOXAPH4PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY
Work Order: 1108090 **Case:**
Sdg: 1108090

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALA **Client Id:** TOXAPH5PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 2

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALB **Client Id:** CHLORO1PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M
Technical Chlordane	TARGET	M
Technical Chlordane (1)	TARGET	M

Sample Total: 3

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALC **Client Id:** CHLORO2PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M

Sample Total: 1

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALD **Client Id:** CHLORO3PA **Instrument:** tracegc84

Analyte	Type	M Flag
Technical Chlordane	SURROGATE	M
Technical Chlordane (1)	SURROGATE	M

Sample Total: 2

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALE **Client Id:** CHLORO4PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M

Sample Total: 1

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY
Work Order: 1108090 **Case:**
Sdg: 1108090

Analysis: GC-8081B PEST TCLP **Sample Type:** Calibration Blank
Lab Id: 1H26017-CCB9 **Client Id:** PIBLKPK **Instrument:** tracegc84

Analyte	Type	M Flag
DCB (A)	SURROGATE	M

Sample Total: 1

Total Manual Integrations: 32

GC and GC/MS Column and Trap Specifications Table

SDG #:	1108090

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (µm)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-5MS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.25	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	Restek	Rxi-5Sil MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Pinnacle II Biphenyl	4.6	5.0	15 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 31

*** This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semivolatiles, pesticides, and Aroclors by the requested analytical methods. Please see the SDG Narrative(s) for the specific fraction(s) relative to this SDG.**

Note: This table also contains HPLC columns.

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC/HPLC chemists. An Extracted Ion Current Profile (EICP) or a GC/HPLC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC/HPLC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak. The most common reasons for performing manual integrations/editing are: the compound was not found by the automatic integration routine, the compound was incorrectly integrated by the automatic integration routine, and the co-eluting compounds were incorrectly integrated by the automatic integration routine

H - Denotes that the data reviewer, GC/MS operator, or GC/HPLC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate GC/MS library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

These codes will appear in the GC/MS and GC/HPLC raw data.

Revision 8 (01/29/2011)

DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on the appropriate reporting form for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches $\geq$ 85%), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the lower of the two values is reported and flagged with a P on the reporting form. When the RPD is equal to or less than 40%, our policy is to also report the lower of the two values, although the choice could be a project specific issue. These SW-846 policies are consistent with Method 8000C. If Method 8000B is required, the higher of the two values is reported. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on the appropriate reporting form for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the appropriate reporting form for the more diluted sample, and **all** reported concentrations on that form are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate reporting forms are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single reporting form.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor. The "S" flag is not utilized for non CLP analyses.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Page 1 of 1

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108091-01	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.5°C SN0015 (IR GUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen, CDM	8/18/11	[illegible]	8/19/11	0955						

WORK ORDER

1108090

Printed: 8/29/2011 2:32:01PM

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H25001
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A 7471B Mercury	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H24015
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
Solids, Dry Weight	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	For 7470A 7471B Mercury in Sequence 1I
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)
1108090-02 ZHEBLKDY [Soil] Sampled 08/19/2011 00:00 Eastern				**ZHE BLANK**	
TCLP-ZHE	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

Norma-Suzanne
Assigned To

1151 2655
Employee ID Number

PREPARATION BENCH SHEET

D: 8/26

14

1082211

GC-8081B PEST TCLP // GC-8081B PEST TCLP DOD

Date/Time Extracted: 8-23-11 @ 1400

Matrix: Soil

Prepared using: GC - TCLP by 3510_GC

8.23.2

Lab Number	Client ID	QCType	Initial (mL)	Final (uL)	Initial pH	Adjusted pH (Y/N)	QC	Surr (uL)	Comments
1082211-BLK1	PBLKDZ	Blank	500	5000	8	N 8	N/A	500	
1082211-BLK2	TCLPBLKDW	Blank	100		6	N 8 8/23/11		500	
1082211-BS1	PDZLCS	LCS	100		6	N 8		500	
1082211-BSD1	PDZLCSD	LCS Dup	100		6	N 8		500	
1082211-MS1	1R-45009MS	Matrix Spike	100		5	N 5		500	
1082211-MSD1	1R-45009MSD	Matrix Spike Dup	100		5	N 5		500	
1108090-01	1R-45009	Sample	100		5	N 5	QC	500	
1108095-01	IDWA	Sample	100		5	N 5	N/A	500	
1108095-02	IDWB	Sample	100		5	N 5		500	

8/23/11

	Description	Spike Amount (uL)		Lot Number
SURROGATE	#449 PEST/ARO SURR	500		IH23001
SPIKE	NSI TCLP Pest Spike Q-4740	500	LCS/LCSD	IB15019
SPIKE	NSI TCLP Pest Spike Q-4740	500	MS/MSD	IB15019

Surrogate & Spike Added By: NS 8/23/11
Initials / Date

Spiking Witnessed By: SB 8-23-11
Initials / Date

Final Vol Verified: [signature]

Reviewed By: [signature]

Analysts Initials: Extracted: NS/SB KD: SB N2: NS Bottled up: NS

Manuf. and lot # of reagents/solvents used: Na2SO4 22X10-766-3 Cl4246i IH15011 CL#14d 75773

Billy
Assigned To

2713
Employee ID Number

Matrix: Soil

PREPARATION BENCH SHEET

1082207

TCLP

Prepared using: EXTRACTIONS - EPA 1311

Date/Time Extracted: 8-22-11 @ 1650

Lab Number	Client ID	QCType	Pre-Test				Particle Reduct. Done (Y/N)	Sample Weight (g)	Final Leach pH Value	Final Volume (mL)	Percent Solid	Comments
					Extration Fluid and Vol. Added							
			Start	Final	1	2						
1082207-BLK1	TCLPBLKDW	Blank	N/A	N/A	2000	N/A	N/A	N/A	4.92	1950	N/A	
1108090-01	1R-45009	~~Duplicate~~ Sample	7.45 ~~6.97~~	2.67	2000	N/A	N	100.0	4.92	2900	100%	
1108095-01	IDWA	Sample	6.94	2.74	2000	N/A	N	100.0	4.92	1450	100%	
1108095-02	IDWB	Sample	6.88	2.70	2000	N/A	N	100.0	4.93	1500	100%	

Ran additional leachate to have enough for MS & MSD extractions

LOADED TUMBLER CALIB.CHECK (MUST BE 30 +/- 2 RPM)	
TUMBLER #	CALC. RPM
2A	31
(COUNT RPM FOR 30 SEC. AND MULTIPLY NUMBER BY 2 TO CALCULATE RPM)	

ROTATION TIME ONLY

Date/Time Started: 8-22-11 1650

Date/Time Stopped: 8-23-11 0855

Room Temp: Min 23° **Max** 24°

Balance ID: Sart. BL-310

Enter Volume (mL) of Extraction Fluid added into appropiate column, e.g., enter volume into column 1 if EXT Fluid #1 is used. Ensure that the fluid volume to sample weight ration is 20:1.

Ext Fluid 1 pH: 4.94 (4.93 +/- 0.05)

Ext Fluid 2 pH: N/A (2.88 +/- 0.05)

Final Vol Verified:

Reviewed By: D. Dickel

Filter Manufacturer: Env. Express **Filter Lot:** 0045001

Manuf. and lot # of reagents/solvents used: 1N HCL - 2XX9-718-2 Extraction Fluid I - 2XX10-769-1

EXTRACT COC

1082211

COMPUCHEM

Prepared using: GC - TCLP by 3510_GC

Matrix: Soil

Lab Number	Client ID	Analysis
1082211-BLK1	PBLKDZ	QC
1082211-BLK2	TCLPBLKDW	QC
1082211-BS1	PDZLCS	QC
1082211-BSD1	PDZLCSD	QC
1082211-MS1	1R-45009MS	QC
1082211-MSD1	1R-45009MSD	QC
1108090-01	1R-45009	GC-8081B PEST TCLP
1108090-01	1R-45009	GC-8081B PEST TCLP DOD
1108095-01	IDWA	GC-8081B PEST TCLP DOD
1108095-02	IDWB	GC-8081B PEST TCLP DOD

UL Burn	8/23/11 1245	GC Refrig #2	8/23/11 1745
Relinquished By	Date	Received By	Date
Refrig #3	8/24/2011 1210	AMP	8/24/2011 1210
Relinquished By	Date	Received By	Date
AMP	8/24/2011 1215	Refrig #4	8/24/2011 1215
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

ANALYSIS DATA SHEET

8081B

1R-45009

Client: CDM FEDERAL PROGRAMS CO SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510_GC File ID: 071p1108090-01.d Sampled: 08/18/11 00:00

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1108090-01 Received: 08/19/11 09:55

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:32

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.0038	0.050	U
76-44-8	Heptachlor		0.0048	0.050	U
1024-57-3	Heptachlor epoxide		0.0056	0.050	U
72-20-8	Endrin		0.014	0.10	U
72-43-5	Methoxychlor		0.030	0.50	U
8001-35-2	Toxaphene		0.96	5.0	U
57-74-9	Technical Chlordane		0.48	1.6	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.848	81	43 - 144	
DCB (A) [2C]	6.000	5.272	88	43 - 144	
TCX (A)	3.000	2.185	73	43 - 135	
TCX (A) [2C]	3.000	2.319	77	43 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

8081B

PBLKDZ

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 065p1082211-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 21:39

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.00076	0.010	U
76-44-8	Heptachlor		0.00096	0.010	U
1024-57-3	Heptachlor epoxide		0.0011	0.010	U
72-20-8	Endrin		0.0028	0.020	U
72-43-5	Methoxychlor		0.0060	0.10	U
8001-35-2	Toxaphene		0.19	1.0	U
57-74-9	Technical Chlordane		0.096	0.32	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	1.200	0.7776	65	43 - 144	
TCX (A)	0.6000	0.3308	55	43 - 135	

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ANALYSIS DATA SHEET

8081B

PBLKDZ

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510 GC File ID: 065p1082211-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 21:39

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]		0.00076	0.010	U
76-44-8	Heptachlor [2C]		0.00096	0.010	U
1024-57-3	Heptachlor Epoxide [2C]		0.0011	0.010	U
72-20-8	Endrin [2C]		0.0028	0.020	U
72-43-5	Methoxychlor [2C]		0.0060	0.10	U
8001-35-2	Toxaphene [2C]		0.19	1.0	U
57-74-9	Technical Chlordane [2C]		0.096	0.32	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	1.200	0.8341	70	43 - 144	
TCX (A) [2C]	0.6000	0.3440	57	43 - 135	

ANALYSIS DATA SHEET

8081B

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 066p1082211-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK2 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:08

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.0038	0.050	U
76-44-8	Heptachlor		0.0048	0.050	U
1024-57-3	Heptachlor epoxide		0.0056	0.050	U
72-20-8	Endrin		0.014	0.10	U
72-43-5	Methoxychlor		0.030	0.50	U
8001-35-2	Toxaphene		0.96	5.0	U
57-74-9	Technical Chlordane		0.48	1.6	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.964	83	43 - 144	
TCX (A)	3.000	1.950	65	43 - 135	

Environmental Testing Laboratories

CompuChem

A Division Of

Liberty Analytical Corp.

ANALYSIS DATA SHEET

8081B

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 066p1082211-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK2 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:08

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]		0.0038	0.050	U
76-44-8	Heptachlor [2C]	0.090	0.0048	0.050	
1024-57-3	Heptachlor Epoxide [2C]		0.0056	0.050	U
72-20-8	Endrin [2C]		0.014	0.10	U
72-43-5	Methoxychlor [2C]		0.030	0.50	U
8001-35-2	Toxaphene [2C]		0.96	5.0	U
57-74-9	Technical Chlordane [2C]		0.48	1.6	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.405	90	43 - 144	
TCX (A) [2C]	3.000	2.042	68	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 067p1082211-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:37

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.564	0.0038	0.050	
76-44-8	Heptachlor	1.235	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.582	0.0056	0.050	
8001-35-2	Toxaphene	40.67	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.996	83	43 - 144	
TCX (A)	3.000	2.225	74	43 - 135	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8081B

PDZLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 067p1082211-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:37

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.611	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.288	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.742	0.0056	0.050	
8001-35-2	Toxaphene [2C]	39.58	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.429	90	43 - 144	
TCX (A) [2C]	3.000	2.319	77	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 068p1082211-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:05

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.281	0.0038	0.050	
76-44-8	Heptachlor	1.093	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.309	0.0056	0.050	
8001-35-2	Toxaphene	30.20	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.190	70	43 - 144	
TCX (A)	3.000	1.933	64	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 068p1082211-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:05

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.293	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.118	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.434	0.0056	0.050	
8001-35-2	Toxaphene [2C]	33.03	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	4.488	75	43 - 144	
TCX (A) [2C]	3.000	1.974	66	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 069p1082211-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:35

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.529	0.0038	0.050	
76-44-8	Heptachlor	1.286	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.571	0.0056	0.050	
8001-35-2	Toxaphene	38.75	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.926	82	43 - 144	
TCX (A)	3.000	2.381	79	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510 GC File ID: 069p1082211-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:35

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.564	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.357	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.711	0.0056	0.050	
8001-35-2	Toxaphene [2C]	41.79	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.341	89	43 - 144	
TCX (A) [2C]	3.000	2.462	82	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 070p1082211-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:04

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.577	0.0038	0.050	
76-44-8	Heptachlor	1.268	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.643	0.0056	0.050	
8001-35-2	Toxaphene	48.28	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	5.079	85	43 - 144	
TCX (A)	3.000	2.297	77	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 070p1082211-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:04

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.627	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.341	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.890	0.0056	0.050	
8001-35-2	Toxaphene [2C]	46.91	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.522	92	43 - 144	
TCX (A) [2C]	3.000	2.438	81	43 - 135	

PREPARATION BATCH SUMMARY

8081B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082211 Matrix: Water Preparation: TCLP by 3510_GC

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (uL)
PBLKDZ	1082211-BLK1	08/23/11 14:00	500	5000
TCLPBLKDW	1082211-BLK2	08/23/11 14:00	100	5000
PDZLCS	1082211-BS1	08/23/11 14:00	100	5000
PDZLCSD	1082211-BSD1	08/23/11 14:00	100	5000
1R-45009MS	1082211-MS1	08/23/11 14:00	100	5000
1R-45009MSD	1082211-MSD1	08/23/11 14:00	100	5000
1R-45009	1108090-01	08/23/11 14:00	100	5000

LCS / LCS DUPLICATE RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-BS1 Matrix: Water Client ID: PDZLCS Batch: 1082211

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	1.564	104		32 - 127
gamma-BHC (Lindane) [2C]	1.500	1.611	107		32 - 127
Heptachlor	1.500	1.235	82		34 - 111
Heptachlor [2C]	1.500	1.288 B	86		34 - 111
Heptachlor epoxide	1.500	1.582	105		37 - 142
Heptachlor Epoxide [2C]	1.500	1.742	116		37 - 142
Toxaphene	50.00	40.67	81		41 - 126
Toxaphene [2C]	50.00	39.58	79		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
gamma-BHC (Lindane)	1.500	1.281	85	20	20		32 - 127
gamma-BHC (Lindane) [2C]	1.500	1.293	86	22 *	20		32 - 127
Heptachlor	1.500	1.093	73	12	20		34 - 111
Heptachlor [2C]	1.500	1.118 B	75	14	20		34 - 111
Heptachlor epoxide	1.500	1.309	87	19	20		37 - 142
Heptachlor Epoxide [2C]	1.500	1.434	96	19	20		37 - 142
Toxaphene	50.00	30.20	60	30 *	20		41 - 126
Toxaphene [2C]	50.00	33.03	66	18	20		41 - 126

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	0.050 U	1.529	102		32 - 127
Heptachlor	1.500	0.050 U	1.286	86		34 - 111
Heptachlor epoxide	1.500	0.050 U	1.571	105		37 - 142
Toxaphene	50.00	5.0 U	38.75	78		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	1.577	105	3		20	32 - 127
Heptachlor	1.500	1.268	84	1		20	34 - 111
Heptachlor epoxide	1.500	1.643	110	4		20	37 - 142
Toxaphene	50.00	48.28	97	22	*	20	41 - 126

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane) [2C]	1.500	0.050 U	1.564	104		32 - 127
Heptachlor [2C]	1.500	0.063 B	1.357 B	86		34 - 111
Heptachlor Epoxide [2C]	1.500	0.050 U	1.711	114		37 - 142
Toxaphene [2C]	50.00	5.0 U	41.79	84		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane) [2C]	1.500	1.627	108	4		20	32 - 127
Heptachlor [2C]	1.500	1.341 B	85	1		20	34 - 111
Heptachlor Epoxide [2C]	1.500	1.890	126	10		20	37 - 142
Toxaphene [2C]	50.00	46.91	94	12		20	41 - 126

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H23014 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Secondary Cal Check (1H23014-SCV1) ng/uL Lab File ID: 019p1H23014-SCV Analyzed: 08/23/11 23:09				
DCB (A)	0.08000	90	0 - 200	
DCB (A) [2C]	0.08000	95	0 - 200	
TCX (A)	0.04000	85	0 - 200	
TCX (A) [2C]	0.04000	88	0 - 200	

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H26017 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Blank (1082211-BLK1) ug/L Lab File ID: 065p1082211-BLK Analyzed: 08/24/11 21:39				
DCB (A)	1.200	65	43 - 144	
DCB (A) [2C]	1.200	70	43 - 144	
TCX (A)	0.6000	55	43 - 135	
TCX (A) [2C]	0.6000	57	43 - 135	
Blank (1082211-BLK2) ug/L Lab File ID: 066p1082211-BLK Analyzed: 08/24/11 22:08				
DCB (A)	6.000	83	43 - 144	
DCB (A) [2C]	6.000	90	43 - 144	
TCX (A)	3.000	65	43 - 135	
TCX (A) [2C]	3.000	68	43 - 135	
LCS (1082211-BS1) ug/L Lab File ID: 067p1082211-BS1. Analyzed: 08/24/11 22:37				
DCB (A)	6.000	83	43 - 144	
DCB (A) [2C]	6.000	90	43 - 144	
TCX (A)	3.000	74	43 - 135	
TCX (A) [2C]	3.000	77	43 - 135	
LCS Dup (1082211-BSD1) ug/L Lab File ID: 068p1082211-BSD Analyzed: 08/24/11 23:05				
DCB (A)	6.000	70	43 - 144	
DCB (A) [2C]	6.000	75	43 - 144	
TCX (A)	3.000	64	43 - 135	
TCX (A) [2C]	3.000	66	43 - 135	
Matrix Spike (1082211-MS1) ug/L Lab File ID: 069p1082211-MS1. Analyzed: 08/24/11 23:35				
DCB (A)	6.000	82	43 - 144	
DCB (A) [2C]	6.000	89	43 - 144	
TCX (A)	3.000	79	43 - 135	
TCX (A) [2C]	3.000	82	43 - 135	

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H26017 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Matrix Spike Dup (1082211-MSD1) ug/L Lab File ID: 070p1082211-MSD Analyzed: 08/25/11 00:04				
DCB (A)	6.000	85	43 - 144	
DCB (A) [2C]	6.000	92	43 - 144	
TCX (A)	3.000	77	43 - 135	
TCX (A) [2C]	3.000	81	43 - 135	
1R-45009 (1108090-01) ug/L Lab File ID: 071p1108090-01.d Analyzed: 08/25/11 00:32				
DCB (A)	6.000	81	43 - 144	
DCB (A) [2C]	6.000	88	43 - 144	
TCX (A)	3.000	73	43 - 135	
TCX (A) [2C]	3.000	77	43 - 135	

CompuChem

A Division Of

Liberty Analytical Corp.

8/29/2011

PAUL LAMMERS

CDM FEDERAL PROGRAMS CORP.

60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Joan Pardee

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Laboratory: COMPUCHEM

SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: 8-26-11 Title: LAB DIR

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 1108090
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: 1R-45009

The 1 soil sample listed above was received intact, refrigerated at 0.5°C, with proper documentation, in sealed shipping containers, on August 19, 2011. SW-846, 3rd Edition, Update 4, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081B were used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG # 1108090 included in the sample data sections.

The sample was prepped and analyzed within the method holding time criteria

Target analytes were present above the reporting limits in the sample.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The method blanks associated with the sample met all quality control criteria.

The associated Laboratory Control Samples (LCS) met overall accuracy criteria.

Duplicate matrix spikes were performed with sample 1R-45009, and met most recovery and precision criteria.

Manual integrations were performed on one or more of the process files associated with this SDG. Please see the detailed Manual Integration Summary report that is located behind this SDG narrative. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and/or in the computer-readable data submitted electronically has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
Director of Laboratory Operations
August 29, 2011

CompuChem
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Manual Integration Summary

Client: CDM FEDERAL PROGRAMS CORP.
Work Order: 1108090
Sdg: 1108090
Project: LIBBY OU4FIELD/MT-TCLP-7DAY
Case:

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-BS1 **Client Id:** PDZLCS
Sample Type: LCS
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M
Toxaphene		M
Toxaphene (1)		M

Sample Total: 3

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-BSD1 **Client Id:** PDZLCSD
Sample Type: LCS Dup
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-MS1 **Client Id:** 1R-45009MS
Sample Type: Matrix Spike
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1082211-MSD1 **Client Id:** 1R-45009MSD
Sample Type: Matrix Spike Dup
Instrument: tracegc84

Analyte	Type	M Flag
Heptachlor [2C]		M

Sample Total: 1

Analysis: GC-8081B PEST TCLP
Lab Id: 1H23014-CAL6 **Client Id:** TOXAPH1PA
Sample Type: Cal Standard
Instrument: tracegc84

Analyte	Type	M Flag
Toxaphene		M

Toxaphene (1)		M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL7 **Client Id:** TOXAPH2PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL8 **Client Id:** TOXAPH3PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CAL9 **Client Id:** TOXAPH4PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene	TARGET	M
Toxaphene (1)	TARGET	M
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 4

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY
Work Order: 1108090 **Case:**
Sdg: 1108090

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALA **Client Id:** TOXAPH5PA **Instrument:** tracegc84

Analyte	Type	M Flag
Toxaphene (1) [2C]	TARGET	M
Toxaphene [2C]	TARGET	M

Sample Total: 2

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALB **Client Id:** CHLORO1PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M
Technical Chlordane	TARGET	M
Technical Chlordane (1)	TARGET	M

Sample Total: 3

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALC **Client Id:** CHLORO2PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M

Sample Total: 1

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALD **Client Id:** CHLORO3PA **Instrument:** tracegc84

Analyte	Type	M Flag
Technical Chlordane	SURROGATE	M
Technical Chlordane (1)	SURROGATE	M

Sample Total: 2

Analysis: GC-8081B PEST TCLP **Sample Type:** Cal Standard
Lab Id: 1H23014-CALE **Client Id:** CHLORO4PA **Instrument:** tracegc84

Analyte	Type	M Flag
TCX (A) [2C]	SURROGATE	M

Sample Total: 1

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY
Work Order: 1108090 **Case:**
Sdg: 1108090

Analysis: GC-8081B PEST TCLP **Sample Type:** Calibration Blank
Lab Id: 1H26017-CCB9 **Client Id:** PIBLKPK **Instrument:** tracegc84

Analyte	Type	M Flag
DCB (A)	SURROGATE	M

Sample Total: 1

Total Manual Integrations: 32

GC and GC/MS Column and Trap Specifications Table

SDG #:	1108090

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (µm)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-5MS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.25	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	Restek	Rxi-5Sil MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Pinnacle II Biphenyl	4.6	5.0	15 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 31

*** This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semivolatiles, pesticides, and Aroclors by the requested analytical methods. Please see the SDG Narrative(s) for the specific fraction(s) relative to this SDG.**

Note: This table also contains HPLC columns.

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC/HPLC chemists. An Extracted Ion Current Profile (EICP) or a GC/HPLC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC/HPLC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak. The most common reasons for performing manual integrations/editing are: the compound was not found by the automatic integration routine, the compound was incorrectly integrated by the automatic integration routine, and the co-eluting compounds were incorrectly integrated by the automatic integration routine

H - Denotes that the data reviewer, GC/MS operator, or GC/HPLC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate GC/MS library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

These codes will appear in the GC/MS and GC/HPLC raw data.

Revision 8 (01/29/2011)

DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on the appropriate reporting form for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches $\geq$ 85%), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the lower of the two values is reported and flagged with a P on the reporting form. When the RPD is equal to or less than 40%, our policy is to also report the lower of the two values, although the choice could be a project specific issue. These SW-846 policies are consistent with Method 8000C. If Method 8000B is required, the higher of the two values is reported. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on the appropriate reporting form for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the appropriate reporting form for the more diluted sample, and **all** reported concentrations on that form are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate reporting forms are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single reporting form.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor. The "S" flag is not utilized for non CLP analyses.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Page 1 of 1

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108091-01	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.5°C SN0015 (IR GUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen, CDM	8/18/11	[illegible]	8/19/11	0955						

WORK ORDER

1108090

Printed: 8/29/2011 2:32:01PM

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H25001
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A 7471B Mercury	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H24015
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
Solids, Dry Weight	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	For 7470A 7471B Mercury in Sequence 1I
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)
1108090-02 ZHEBLKDY [Soil] Sampled 08/19/2011 00:00 Eastern				**ZHE BLANK**	
TCLP-ZHE	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

Norma-Suzanne
Assigned To

1151 2655
Employee ID Number

PREPARATION BENCH SHEET

D: 8/26

14

1082211

GC-8081B PEST TCLP // GC-8081B PEST TCLP DOD

Date/Time Extracted: 8-23-11 @ 1400

Matrix: Soil

Prepared using: GC - TCLP by 3510_GC

8.23.2

Lab Number	Client ID	QCType	Initial (mL)	Final (uL)	Initial pH	Adjusted pH (Y/N)	QC	Surr (uL)	Comments
1082211-BLK1	PBLKDZ	Blank	500	5000	8	N 8	N/A	500	
1082211-BLK2	TCLPBLKDW	Blank	100		6	N 8 8/23/11		500	
1082211-BS1	PDZLCS	LCS	100		6	N 8		500	
1082211-BSD1	PDZLCSD	LCS Dup	100		6	N 8		500	
1082211-MS1	1R-45009MS	Matrix Spike	100		5	N 5		500	
1082211-MSD1	1R-45009MSD	Matrix Spike Dup	100		5	N 5		500	
1108090-01	1R-45009	Sample	100		5	N 5	QC	500	
1108095-01	IDWA	Sample	100		5	N 5	N/A	500	
1108095-02	IDWB	Sample	100		5	N 5		500	

8/23/11

	Description	Spike Amount (uL)		Lot Number
SURROGATE	#449 PEST/ARO SURR	500		IH23001
SPIKE	NSI TCLP Pest Spike Q-4740	500	LCS/LCSD	IB15019
SPIKE	NSI TCLP Pest Spike Q-4740	500	MS/MSD	IB15019

Surrogate & Spike Added By: NS 8/23/11
Initials / Date

Spiking Witnessed By: SB 8-23-11
Initials / Date

Final Vol Verified: [signature]

Reviewed By: [signature]

Analysts Initials: Extracted: NS/SB KD: SB N2: NS Bottled up: NS

Manuf. and lot # of reagents/solvents used: Na2SO4 22X10-766-3 Cl4246i IH15011 CL#14d 75773

Billy
Assigned To

2713
Employee ID Number

Matrix: Soil

PREPARATION BENCH SHEET

1082207

TCLP

Prepared using: EXTRACTIONS - EPA 1311

Date/Time Extracted: 8-22-11 @ 1650

Lab Number	Client ID	QCType	Pre-Test				Particle Reduct. Done (Y/N)	Sample Weight (g)	Final Leach pH Value	Final Volume (mL)	Percent Solid	Comments
					Extration Fluid and Vol. Added							
			Start	Final	1	2						
1082207-BLK1	TCLPBLKDW	Blank	N/A	N/A	2000	N/A	N/A	N/A	4.92	1950	N/A	
1108090-01	1R-45009	~~Duplicate~~ Sample	7.45 ~~6.97~~	2.67	2000	N/A	N	100.0	4.92	2900	100%	
1108095-01	IDWA	Sample	6.94	2.74	2000	N/A	N	100.0	4.92	1450	100%	
1108095-02	IDWB	Sample	6.88	2.70	2000	N/A	N	100.0	4.93	1500	100%	

Ran additional leachate to have enough for MS & MSD extractions

LOADED TUMBLER CALIB.CHECK (MUST BE 30 +/- 2 RPM)	
TUMBLER #	CALC. RPM
2A	31
(COUNT RPM FOR 30 SEC. AND MULTIPLY NUMBER BY 2 TO CALCULATE RPM)	

ROTATION TIME ONLY

Date/Time Started: 8-22-11 1650

Date/Time Stopped: 8-23-11 0855

Room Temp: Min 23° **Max** 24°

Balance ID: Sart. BL-310

Enter Volume (mL) of Extraction Fluid added into appropiate column, e.g., enter volume into column 1 if EXT Fluid #1 is used. Ensure that the fluid volume to sample weight ration is 20:1.

Ext Fluid 1 pH: 4.94 (4.93 +/- 0.05)

Ext Fluid 2 pH: N/A (2.88 +/- 0.05)

Final Vol Verified:

Reviewed By: D. Dickel

Filter Manufacturer: Env. Express **Filter Lot:** 0045001

Manuf. and lot # of reagents/solvents used: 1N HCL - 2XX9-718-2 Extraction Fluid I - 2XX10-769-1

EXTRACT COC

1082211

COMPUCHEM

Prepared using: GC - TCLP by 3510_GC

Matrix: Soil

Lab Number	Client ID	Analysis
1082211-BLK1	PBLKDZ	QC
1082211-BLK2	TCLPBLKDW	QC
1082211-BS1	PDZLCS	QC
1082211-BSD1	PDZLCSD	QC
1082211-MS1	1R-45009MS	QC
1082211-MSD1	1R-45009MSD	QC
1108090-01	1R-45009	GC-8081B PEST TCLP
1108090-01	1R-45009	GC-8081B PEST TCLP DOD
1108095-01	IDWA	GC-8081B PEST TCLP DOD
1108095-02	IDWB	GC-8081B PEST TCLP DOD

UL Burn	8/23/11 1245	GC Refrig #2	8/23/11 1745
Relinquished By	Date	Received By	Date
Refrig #3	8/24/2011 1210	AMP	8/24/2011 1210
Relinquished By	Date	Received By	Date
AMP	8/24/2011 1215	Refrig #4	8/24/2011 1215
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

ANALYSIS DATA SHEET

8081B

1R-45009

Client: CDM FEDERAL PROGRAMS CO SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510_GC File ID: 071p1108090-01.d Sampled: 08/18/11 00:00

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1108090-01 Received: 08/19/11 09:55

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:32

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.0038	0.050	U
76-44-8	Heptachlor		0.0048	0.050	U
1024-57-3	Heptachlor epoxide		0.0056	0.050	U
72-20-8	Endrin		0.014	0.10	U
72-43-5	Methoxychlor		0.030	0.50	U
8001-35-2	Toxaphene		0.96	5.0	U
57-74-9	Technical Chlordane		0.48	1.6	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.848	81	43 - 144	
DCB (A) [2C]	6.000	5.272	88	43 - 144	
TCX (A)	3.000	2.185	73	43 - 135	
TCX (A) [2C]	3.000	2.319	77	43 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

8081B

PBLKDZ

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 065p1082211-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 21:39

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.00076	0.010	U
76-44-8	Heptachlor		0.00096	0.010	U
1024-57-3	Heptachlor epoxide		0.0011	0.010	U
72-20-8	Endrin		0.0028	0.020	U
72-43-5	Methoxychlor		0.0060	0.10	U
8001-35-2	Toxaphene		0.19	1.0	U
57-74-9	Technical Chlordane		0.096	0.32	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	1.200	0.7776	65	43 - 144	
TCX (A)	0.6000	0.3308	55	43 - 135	

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ANALYSIS DATA SHEET

8081B

PBLKDZ

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510 GC File ID: 065p1082211-BLK1.d QC Type: Blank

Initial/Final: 500mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 21:39

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]		0.00076	0.010	U
76-44-8	Heptachlor [2C]		0.00096	0.010	U
1024-57-3	Heptachlor Epoxide [2C]		0.0011	0.010	U
72-20-8	Endrin [2C]		0.0028	0.020	U
72-43-5	Methoxychlor [2C]		0.0060	0.10	U
8001-35-2	Toxaphene [2C]		0.19	1.0	U
57-74-9	Technical Chlordane [2C]		0.096	0.32	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	1.200	0.8341	70	43 - 144	
TCX (A) [2C]	0.6000	0.3440	57	43 - 135	

ANALYSIS DATA SHEET

8081B

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 066p1082211-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK2 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:08

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)		0.0038	0.050	U
76-44-8	Heptachlor		0.0048	0.050	U
1024-57-3	Heptachlor epoxide		0.0056	0.050	U
72-20-8	Endrin		0.014	0.10	U
72-43-5	Methoxychlor		0.030	0.50	U
8001-35-2	Toxaphene		0.96	5.0	U
57-74-9	Technical Chlordane		0.48	1.6	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.964	83	43 - 144	
TCX (A)	3.000	1.950	65	43 - 135	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8081B

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 066p1082211-BLK2.d QC Type: Blank

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BLK2 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:08

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]		0.0038	0.050	U
76-44-8	Heptachlor [2C]	0.090	0.0048	0.050	
1024-57-3	Heptachlor Epoxide [2C]		0.0056	0.050	U
72-20-8	Endrin [2C]		0.014	0.10	U
72-43-5	Methoxychlor [2C]		0.030	0.50	U
8001-35-2	Toxaphene [2C]		0.96	5.0	U
57-74-9	Technical Chlordane [2C]		0.48	1.6	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.405	90	43 - 144	
TCX (A) [2C]	3.000	2.042	68	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 067p1082211-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:37

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.564	0.0038	0.050	
76-44-8	Heptachlor	1.235	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.582	0.0056	0.050	
8001-35-2	Toxaphene	40.67	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.996	83	43 - 144	
TCX (A)	3.000	2.225	74	43 - 135	

Environmental Testing Laboratories

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ANALYSIS DATA SHEET

8081B

PDZLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 067p1082211-BS1.d QC Type: LCS

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 22:37

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.611	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.288	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.742	0.0056	0.050	
8001-35-2	Toxaphene [2C]	39.58	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.429	90	43 - 144	
TCX (A) [2C]	3.000	2.319	77	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 068p1082211-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:05

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.281	0.0038	0.050	
76-44-8	Heptachlor	1.093	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.309	0.0056	0.050	
8001-35-2	Toxaphene	30.20	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.190	70	43 - 144	
TCX (A)	3.000	1.933	64	43 - 135	

ANALYSIS DATA SHEET

8081B

PDZLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 068p1082211-BSD1.d QC Type: LCS Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-BSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:05

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.293	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.118	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.434	0.0056	0.050	
8001-35-2	Toxaphene [2C]	33.03	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	4.488	75	43 - 144	
TCX (A) [2C]	3.000	1.974	66	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 069p1082211-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MS1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:35

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.529	0.0038	0.050	
76-44-8	Heptachlor	1.286	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.571	0.0056	0.050	
8001-35-2	Toxaphene	38.75	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	4.926	82	43 - 144	
TCX (A)	3.000	2.381	79	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510 GC File ID: 069p1082211-MS1.d QC Type: Matrix Spike

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MS1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 23:35

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.564	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.357	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.711	0.0056	0.050	
8001-35-2	Toxaphene [2C]	41.79	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.341	89	43 - 144	
TCX (A) [2C]	3.000	2.462	82	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 070p1082211-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MSD1 Column ID: clpest

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:04

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane)	1.577	0.0038	0.050	
76-44-8	Heptachlor	1.268	0.0048	0.050	
1024-57-3	Heptachlor epoxide	1.643	0.0056	0.050	
8001-35-2	Toxaphene	48.28	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A)	6.000	5.079	85	43 - 144	
TCX (A)	3.000	2.297	77	43 - 135	

ANALYSIS DATA SHEET

8081B

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: TCLP by 3510_GC File ID: 070p1082211-MSD1.d QC Type: Matrix Spike Dup

Initial/Final: 100mL / 5000uL Sulfur Cleanup: N Lab ID: 1082211-MSD1 Column ID: clpest2

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/25/11 00:04

Batch: 1082211 Sequence: 1H26017 Calibration: 1082603 Instrument: tracegc84

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
58-89-9	gamma-BHC (Lindane) [2C]	1.627	0.0038	0.050	
76-44-8	Heptachlor [2C]	1.341	0.0048	0.050	B
1024-57-3	Heptachlor Epoxide [2C]	1.890	0.0056	0.050	
8001-35-2	Toxaphene [2C]	46.91	0.96	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
DCB (A) [2C]	6.000	5.522	92	43 - 144	
TCX (A) [2C]	3.000	2.438	81	43 - 135	

PREPARATION BATCH SUMMARY

8081B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082211 Matrix: Water Preparation: TCLP by 3510_GC

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (uL)
PBLKDZ	1082211-BLK1	08/23/11 14:00	500	5000
TCLPBLKDW	1082211-BLK2	08/23/11 14:00	100	5000
PDZLCS	1082211-BS1	08/23/11 14:00	100	5000
PDZLCSD	1082211-BSD1	08/23/11 14:00	100	5000
1R-45009MS	1082211-MS1	08/23/11 14:00	100	5000
1R-45009MSD	1082211-MSD1	08/23/11 14:00	100	5000
1R-45009	1108090-01	08/23/11 14:00	100	5000

LCS / LCS DUPLICATE RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-BS1 Matrix: Water Client ID: PDZLCS Batch: 1082211

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	1.564	104		32 - 127
gamma-BHC (Lindane) [2C]	1.500	1.611	107		32 - 127
Heptachlor	1.500	1.235	82		34 - 111
Heptachlor [2C]	1.500	1.288 B	86		34 - 111
Heptachlor epoxide	1.500	1.582	105		37 - 142
Heptachlor Epoxide [2C]	1.500	1.742	116		37 - 142
Toxaphene	50.00	40.67	81		41 - 126
Toxaphene [2C]	50.00	39.58	79		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
gamma-BHC (Lindane)	1.500	1.281	85	20	20		32 - 127
gamma-BHC (Lindane) [2C]	1.500	1.293	86	22 *	20		32 - 127
Heptachlor	1.500	1.093	73	12	20		34 - 111
Heptachlor [2C]	1.500	1.118 B	75	14	20		34 - 111
Heptachlor epoxide	1.500	1.309	87	19	20		37 - 142
Heptachlor Epoxide [2C]	1.500	1.434	96	19	20		37 - 142
Toxaphene	50.00	30.20	60	30 *	20		41 - 126
Toxaphene [2C]	50.00	33.03	66	18	20		41 - 126

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	0.050 U	1.529	102		32 - 127
Heptachlor	1.500	0.050 U	1.286	86		34 - 111
Heptachlor epoxide	1.500	0.050 U	1.571	105		37 - 142
Toxaphene	50.00	5.0 U	38.75	78		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	1.500	1.577	105	3		20	32 - 127
Heptachlor	1.500	1.268	84	1		20	34 - 111
Heptachlor epoxide	1.500	1.643	110	4		20	37 - 142
Toxaphene	50.00	48.28	97	22	*	20	41 - 126

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

8081B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082211-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
gamma-BHC (Lindane) [2C]	1.500	0.050 U	1.564	104		32 - 127
Heptachlor [2C]	1.500	0.063 B	1.357 B	86		34 - 111
Heptachlor Epoxide [2C]	1.500	0.050 U	1.711	114		37 - 142
Toxaphene [2C]	50.00	5.0 U	41.79	84		41 - 126

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane) [2C]	1.500	1.627	108	4		20	32 - 127
Heptachlor [2C]	1.500	1.341 B	85	1		20	34 - 111
Heptachlor Epoxide [2C]	1.500	1.890	126	10		20	37 - 142
Toxaphene [2C]	50.00	46.91	94	12		20	41 - 126

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H23014 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Secondary Cal Check (1H23014-SCV1) ng/uL Lab File ID: 019p1H23014-SCV Analyzed: 08/23/11 23:09				
DCB (A)	0.08000	90	0 - 200	
DCB (A) [2C]	0.08000	95	0 - 200	
TCX (A)	0.04000	85	0 - 200	
TCX (A) [2C]	0.04000	88	0 - 200	

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H26017 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Blank (1082211-BLK1) ug/L Lab File ID: 065p1082211-BLK Analyzed: 08/24/11 21:39				
DCB (A)	1.200	65	43 - 144	
DCB (A) [2C]	1.200	70	43 - 144	
TCX (A)	0.6000	55	43 - 135	
TCX (A) [2C]	0.6000	57	43 - 135	
Blank (1082211-BLK2) ug/L Lab File ID: 066p1082211-BLK Analyzed: 08/24/11 22:08				
DCB (A)	6.000	83	43 - 144	
DCB (A) [2C]	6.000	90	43 - 144	
TCX (A)	3.000	65	43 - 135	
TCX (A) [2C]	3.000	68	43 - 135	
LCS (1082211-BS1) ug/L Lab File ID: 067p1082211-BS1. Analyzed: 08/24/11 22:37				
DCB (A)	6.000	83	43 - 144	
DCB (A) [2C]	6.000	90	43 - 144	
TCX (A)	3.000	74	43 - 135	
TCX (A) [2C]	3.000	77	43 - 135	
LCS Dup (1082211-BSD1) ug/L Lab File ID: 068p1082211-BSD Analyzed: 08/24/11 23:05				
DCB (A)	6.000	70	43 - 144	
DCB (A) [2C]	6.000	75	43 - 144	
TCX (A)	3.000	64	43 - 135	
TCX (A) [2C]	3.000	66	43 - 135	
Matrix Spike (1082211-MS1) ug/L Lab File ID: 069p1082211-MS1. Analyzed: 08/24/11 23:35				
DCB (A)	6.000	82	43 - 144	
DCB (A) [2C]	6.000	89	43 - 144	
TCX (A)	3.000	79	43 - 135	
TCX (A) [2C]	3.000	82	43 - 135	

SURROGATE STANDARD RECOVERY

8081B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: tracegc84

Sequence: 1H26017 Calibration: 1082603

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Matrix Spike Dup (1082211-MSD1) ug/L Lab File ID: 070p1082211-MSD Analyzed: 08/25/11 00:04				
DCB (A)	6.000	85	43 - 144	
DCB (A) [2C]	6.000	92	43 - 144	
TCX (A)	3.000	77	43 - 135	
TCX (A) [2C]	3.000	81	43 - 135	
1R-45009 (1108090-01) ug/L Lab File ID: 071p1108090-01.d Analyzed: 08/25/11 00:32				
DCB (A)	6.000	81	43 - 144	
DCB (A) [2C]	6.000	88	43 - 144	
TCX (A)	3.000	73	43 - 135	
TCX (A) [2C]	3.000	77	43 - 135	

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Liberty Analytical Corp.
8/29/2011

PAUL LAMMERS
CDM FEDERAL PROGRAMS CORP.
60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem
a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Laboratory: COMPUCHEM

SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Ken Grzybowski

Date: 8.26.11 Title: LDB DIR

Environmental Testing Laboratories
CompuChem
A Division Of
Liberty Analytical Corp.

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 1108090
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS:1R-45009.

The 1 soil sample listed above was received intact, properly refrigerated at 0.5°C, with proper documentation, in sealed shipping containers, on August 19, 2011. The sample was scheduled for the requested analysis of the semivolatile fraction. SW-846, 3rd Edition, Update 3, TCLP (Method 3510), and Method 8270D were used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. This portion of the SDG narratives deals with the semivolatile fraction only.

Semivolatile

Extraction and analysis holding time requirements were met for the sample.

Semivolatile project analytes were not identified above the Quantitation Limit (QL) in the sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Tailing factor criteria were met for pentachlorophenol and benzidine. The breakdown criterion was met for DDT. These three compounds have been added to the DFTPP solution and analyzed together.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogates met recovery and retention time criteria in the analysis of the sample.

All of the internal standards met response and retention time criteria in the analysis of the sample.

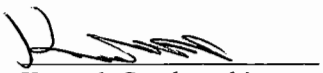
The associated method blanks met all quality control criteria.

The associated LCS/LCSDs prepared and analyzed along with these samples met all accuracy and precision criteria.

Sample 1R-45009 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated lab oratory control sample. Further information is available upon request.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Kenneth Grzybowski
Director of Laboratory Operations
August 26, 2011

CompuChem
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Liberty Analytical Corp.

Manual Integration Summary

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY
Work Order: 1108090 **Case:**
Sdg: 1108090

Analysis: SVOC 8270D TCLP **Sample Type:** Field Sample
Lab Id: 1108090-01 **Client Id:** 1R-45009 **Instrument:** 5972hp66

Analyte	Type	M Flag
Phenol-d5	SURROGATE	M

Sample Total: 1

Analysis: SVOC 8270D TCLP **Sample Type:** Cal Standard
Lab Id: 1H23029-CAL1 **Client Id:** SSTD005X1 **Instrument:** 5972hp66

Analyte	Type	M Flag
2,4,6-Tribromophenol	SURROGATE	M

Sample Total: 1

Analysis: SVOC 8270D TCLP **Sample Type:** Cal Standard
Lab Id: 1H23029-CAL5 **Client Id:** SSTD050X1 **Instrument:** 5972hp66

Analyte	Type	M Flag
Pyridine	TARGET	M

Sample Total: 1

Analysis: SVOC 8270D TCLP **Sample Type:** Cal Standard
Lab Id: 1H23029-CAL6 **Client Id:** SSTD060X1 **Instrument:** 5972hp66

Analyte	Type	M Flag
3 & 4-Methylphenol	TARGET	M
Pyridine	TARGET	M

Sample Total: 2

Total Manual Integrations: 5

GC and GC/MS Column and Trap Specifications Table

SDG #:	1108090

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (µm)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-5MS	0.53	1.0	30
	Restek	clpest	0.32	0.5	30
	Restek	clpest2	0.32	0.25	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
x	Restek	Rxi-5Sil MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Pinnacle II Biphenyl	4.6	5.0	15 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 31

* This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semivolatiles, pesticides, and Aroclors by the requested analytical methods. Please see the SDG Narrative(s) for the specific fraction(s) relative to this SDG.

Note: This table also contains HPLC columns.

CompuChem

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CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC/HPLC chemists. An Extracted Ion Current Profile (EICP) or a GC/HPLC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC/HPLC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak. The most common reasons for performing manual integrations/editing are: the compound was not found by the automatic integration routine, the compound was incorrectly integrated by the automatic integration routine, and the co-eluting compounds were incorrectly integrated by the automatic integration routine

H - Denotes that the data reviewer, GC/MS operator, or GC/HPLC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate GC/MS library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

These codes will appear in the GC/MS and GC/HPLC raw data.

Revision 8 (01/29/2011)

DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on the appropriate reporting form for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 μg/L, but a concentration of 3 μg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches ≥ 85%), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the lower of the two values is reported and flagged with a P on the reporting form. When the RPD is equal to or less than 40%, our policy is to also report the lower of the two values, although the choice could be a project specific issue. These SW-846 policies are consistent with Method 8000C. If Method 8000B is required, the higher of the two values is reported. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on the appropriate reporting form for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the appropriate reporting form for the more diluted sample, and **all** reported concentrations on that form are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate reporting forms are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single reporting form.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor. The "S" flag is not utilized for non CLP analyses.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Page 1 of 1

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
1108090-02	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.5oc SW0015 (ARGUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D Haugen CDM	8/18/11	[signature]	8/19/11	0955						

WORK ORDER

1108090

Printed: 8/26/2011 3:28:26PM

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H25001
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A 7471B Mercury	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	Added for SequenceQC in: 1H24015
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
Solids, Dry Weight	01/01/1980 00:00		08/18/2011 00:00	08/19/2011 09:55	For 7470A 7471B Mercury in Sequence 1I
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)
1108090-02 ZHEBLKDY [Soil] Sampled 08/19/2011 00:00 Eastern				**ZHE BLANK**	
TCLP-ZHE	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/02/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

EXTRACT COC

1082214

COMPUCHEM

Prepared using: SVOA - TCLP by 3510 SV

Matrix: Soil

Lab Number	Client ID	Analysis
1082214-BLK1	SBLKEB	QC
1082214-BLK2	TCLPBLKDW	QC
1082214-BS1	SEBLCS	QC
1082214-BSD1	SEBLCSD	QC
1082214-MS1	1R-45009MS	QC
1082214-MSD1	1R-45009MSD	QC
1108090-01	1R-45009	SVOC 8270D TCLP
1108090-01	1R-45009	SVOC 8270D TCLP DOD
1108095-01	IDWA	SVOC 8270D TCLP DOD
1108095-02	IDWB	SVOC 8270D TCLP DOD

Relinquished By	Date 8/23/11 1745	Received By Gc/ms Refrig #3	Date 8/23/11 1745
Relinquished By GCMS#3	Date 8/24/11 1200	Received By	Date 8/24/11 1200
Relinquished By	Date 8/24/11 1300	Received By GCMS#3	Date 8/24/11 1300
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

ANALYSIS DATA SHEET

SW8270D

1R-45009

Client: CDM FEDERAL PROGRAMS CORP. SDG 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1108090-01A66.d Sampled: 08/18/11 00:00

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1108090-01 Received: 08/19/11 09:55

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 16:13

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
110-86-1	Pyridine		0.710	5.00	U
106-46-7	1,4-Dichlorobenzene		1.00	5.00	U
95-48-7	2-Methylphenol		0.740	10.0	U
106-44-5	3 & 4-Methylphenol		0.830	10.0	U
67-72-1	Hexachloroethane		1.00	5.00	U
98-95-3	Nitrobenzene		1.10	5.00	U
87-68-3	Hexachlorobutadiene		1.50	5.00	U
88-06-2	2,4,6-Trichlorophenol		0.740	10.0	U
95-95-4	2,4,5-Trichlorophenol		1.10	10.0	U
121-14-2	2,4-Dinitrotoluene		0.840	5.00	U
118-74-1	Hexachlorobenzene		0.770	5.00	U
87-86-5	Pentachlorophenol		0.620	10.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	40.31	40	11 - 110	
Phenol-d5	100.0	32.85	33	10 - 110	
Nitrobenzene-d5	50.00	26.22	52	35 - 110	
2-Fluorobiphenyl	50.00	26.66	53	45 - 110	
2,4,6-Tribromophenol	100.0	60.25	60	44 - 131	
Terphenyl-d14	50.00	34.69	69	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

Environmental Testing Laboratories

CompuChem

A Division Of

Liberty Analytical Corp.

ANALYSIS DATA SHEET

SW8270D

SBLKEB

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-BLK1A66.d QC Type: Blank

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-BLK1 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 12:38

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine		0.710	5.00	U
106-46-7	1,4-Dichlorobenzene		1.00	5.00	U
95-48-7	2-Methylphenol		0.740	10.0	U
106-44-5	3 & 4-Methylphenol		0.830	10.0	U
67-72-1	Hexachloroethane		1.00	5.00	U
98-95-3	Nitrobenzene		1.10	5.00	U
87-68-3	Hexachlorobutadiene		1.50	5.00	U
88-06-2	2,4,6-Trichlorophenol		0.740	10.0	U
95-95-4	2,4,5-Trichlorophenol		1.10	10.0	U
121-14-2	2,4-Dinitrotoluene		0.840	5.00	U
118-74-1	Hexachlorobenzene		0.770	5.00	U
87-86-5	Pentachlorophenol		0.620	10.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	50.57	51	11 - 110	
Phenol-d5	100.0	40.85	41	10 - 110	
Nitrobenzene-d5	50.00	32.22	64	35 - 110	
2-Fluorobiphenyl	50.00	29.50	59	45 - 110	
2,4,6-Tribromophenol	100.0	60.74	61	44 - 131	
Terphenyl-d14	50.00	36.06	72	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

ANALYSIS DATA SHEET

SW8270D

TCLPBLKDW

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-BLK2A66.d QC Type: Blank

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-BLK2 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 13:14

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine		0.710	5.00	U
106-46-7	1,4-Dichlorobenzene		1.00	5.00	U
95-48-7	2-Methylphenol		0.740	10.0	U
106-44-5	3 & 4-Methylphenol		0.830	10.0	U
67-72-1	Hexachloroethane		1.00	5.00	U
98-95-3	Nitrobenzene		1.10	5.00	U
87-68-3	Hexachlorobutadiene		1.50	5.00	U
88-06-2	2,4,6-Trichlorophenol		0.740	10.0	U
95-95-4	2,4,5-Trichlorophenol		1.10	10.0	U
121-14-2	2,4-Dinitrotoluene		0.840	5.00	U
118-74-1	Hexachlorobenzene		0.770	5.00	U
87-86-5	Pentachlorophenol		0.620	10.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	52.24	52	11 - 110	
Phenol-d5	100.0	45.44	45	10 - 110	
Nitrobenzene-d5	50.00	36.46	73	35 - 110	
2-Fluorobiphenyl	50.00	31.26	63	45 - 110	
2,4,6-Tribromophenol	100.0	62.27	62	44 - 131	
Terphenyl-d14	50.00	36.11	72	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

Environmental Testing Laboratories

CompuChem

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ANALYSIS DATA SHEET

SW8270D

SEBLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-BS1A66.d QC Type: LCS

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-BS1 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 13:50

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine	25.41	0.710	5.00	
106-46-7	1,4-Dichlorobenzene	31.49	1.00	5.00	
95-48-7	2-Methylphenol	43.89	0.740	10.0	
106-44-5	3 & 4-Methylphenol	71.14	0.830	10.0	
67-72-1	Hexachloroethane	28.01	1.00	5.00	
98-95-3	Nitrobenzene	39.34	1.10	5.00	
87-68-3	Hexachlorobutadiene	29.55	1.50	5.00	
88-06-2	2,4,6-Trichlorophenol	31.73	0.740	10.0	
95-95-4	2,4,5-Trichlorophenol	35.75	1.10	10.0	
121-14-2	2,4-Dinitrotoluene	40.21	0.840	5.00	
118-74-1	Hexachlorobenzene	29.78	0.770	5.00	
87-86-5	Pentachlorophenol	36.50	0.620	10.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	56.65	57	11 - 110	
Phenol-d5	100.0	49.19	49	10 - 110	
Nitrobenzene-d5	50.00	39.04	78	35 - 110	
2-Fluorobiphenyl	50.00	33.10	66	45 - 110	
2,4,6-Tribromophenol	100.0	73.79	74	44 - 131	
Terphenyl-d14	50.00	36.85	74	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ANALYSIS DATA SHEET

SW8270D

SEBLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-BSD1A66.d QC Type: LCS Dup

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-BSD1 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 14:26

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine	25.94	0.710	5.00	
106-46-7	1,4-Dichlorobenzene	31.14	1.00	5.00	
95-48-7	2-Methylphenol	40.82	0.740	10.0	
106-44-5	3 & 4-Methylphenol	64.18	0.830	10.0	
67-72-1	Hexachloroethane	27.83	1.00	5.00	
98-95-3	Nitrobenzene	37.45	1.10	5.00	
87-68-3	Hexachlorobutadiene	29.35	1.50	5.00	
88-06-2	2,4,6-Trichlorophenol	30.74	0.740	10.0	
95-95-4	2,4,5-Trichlorophenol	33.45	1.10	10.0	
121-14-2	2,4-Dinitrotoluene	36.23	0.840	5.00	
118-74-1	Hexachlorobenzene	29.42	0.770	5.00	
87-86-5	Pentachlorophenol	32.87	0.620	10.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	53.93	54	11 - 110	
Phenol-d5	100.0	45.83	46	10 - 110	
Nitrobenzene-d5	50.00	36.39	73	35 - 110	
2-Fluorobiphenyl	50.00	31.49	63	45 - 110	
2,4,6-Tribromophenol	100.0	64.18	64	44 - 131	
Terphenyl-d14	50.00	35.67	71	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

ANALYSIS DATA SHEET

SW8270D

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-MS1A66.d QC Type: Matrix Spike

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-MS1 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 15:01

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine	19.02	0.710	5.00	
106-46-7	1,4-Dichlorobenzene	24.25	1.00	5.00	
95-48-7	2-Methylphenol	29.97	0.740	10.0	
106-44-5	3 & 4-Methylphenol	51.16	0.830	10.0	
67-72-1	Hexachloroethane	20.72	1.00	5.00	
98-95-3	Nitrobenzene	27.22	1.10	5.00	
87-68-3	Hexachlorobutadiene	22.05	1.50	5.00	
88-06-2	2,4,6-Trichlorophenol	23.18	0.740	10.0	
95-95-4	2,4,5-Trichlorophenol	25.63	1.10	10.0	
121-14-2	2,4-Dinitrotoluene	30.82	0.840	5.00	
118-74-1	Hexachlorobenzene	28.65	0.770	5.00	
87-86-5	Pentachlorophenol	32.62	0.620	10.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	42.19	42	11 - 110	
Phenol-d5	100.0	35.71	36	10 - 110	
Nitrobenzene-d5	50.00	26.60	53	35 - 110	
2-Fluorobiphenyl	50.00	23.39	47	45 - 110	
2,4,6-Tribromophenol	100.0	52.21	52	44 - 131	
Terphenyl-d14	50.00	35.11	70	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

Environmental Testing Laboratories CompuChem A Division Of Liberty Analytical Corp.

ANALYSIS DATA SHEET

SW8270D

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Extraction: TCLP by 3510 SV File ID: 1082214-MSD1A66.d QC Type: Matrix Spike Dup

Initial/Final: 500mL / 500uL Sulfur Cleanup: N Lab ID: 1082214-MSD1 Column ID: RTX-5MS

Dilution: 1 pH: Florisil Cleanup: N Prepared: 08/23/11 14:00

% Moisture: NA GPC Cleanup: N GPC Cleanup Factor: N Analyzed: 08/24/11 15:37

Batch: 1082214 Sequence: 1H24009 Calibration: 1082504 Instrument: 5972hp66

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
110-86-1	Pyridine	24.94	0.710	5.00	
106-46-7	1,4-Dichlorobenzene	28.09	1.00	5.00	
95-48-7	2-Methylphenol	35.96	0.740	10.0	
106-44-5	3 & 4-Methylphenol	58.39	0.830	10.0	
67-72-1	Hexachloroethane	24.41	1.00	5.00	
98-95-3	Nitrobenzene	33.03	1.10	5.00	
87-68-3	Hexachlorobutadiene	27.13	1.50	5.00	
88-06-2	2,4,6-Trichlorophenol	28.48	0.740	10.0	
95-95-4	2,4,5-Trichlorophenol	29.77	1.10	10.0	
121-14-2	2,4-Dinitrotoluene	34.53	0.840	5.00	
118-74-1	Hexachlorobenzene	28.55	0.770	5.00	
87-86-5	Pentachlorophenol	30.66	0.620	10.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	100.0	50.85	51	11 - 110	
Phenol-d5	100.0	41.27	41	10 - 110	
Nitrobenzene-d5	50.00	33.03	66	35 - 110	
2-Fluorobiphenyl	50.00	28.79	58	45 - 110	
2,4,6-Tribromophenol	100.0	64.12	64	44 - 131	
Terphenyl-d14	50.00	34.85	70	49 - 120	

(1) - N-nitrosodiphenylamine cannot be separated from diphenylamine. It is acceptable to report the combined result.

(2) - 1,2-Diphenylhydrazine is unstable and converts to azobenzene.

(3) - 3 & 4-Methylphenol cannot be separated for quantitation.

PREPARATION BATCH SUMMARY

SW8270D

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082214 Matrix: Soil Preparation: TCLP by 3510 SV

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (uL)
SBLKEB	1082214-BLK1	08/23/11 14:00	500	500
TCLPBLKDW	1082214-BLK2	08/23/11 14:00	500	500
SEBLCS	1082214-BS1	08/23/11 14:00	500	500
SEBLCSD	1082214-BSD1	08/23/11 14:00	500	500
1R-45009MS	1082214-MS1	08/23/11 14:00	500	500
1R-45009MSD	1082214-MSD1	08/23/11 14:00	500	500
1R-45009	1108090-01	08/23/11 14:00	500	500

LCS / LCS DUPLICATE RECOVERY

SW8270D

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082214-BS1 Matrix: Soil Client ID: SEBLCS Batch: 1082214

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Pyridine	50.00	25.41	51		20 - 100
1,4-Dichlorobenzene	50.00	31.49	63		25 - 100
2-Methylphenol	50.00	43.89	88		25 - 100
3 & 4-Methylphenol	100.0	71.14	71		24 - 100
Hexachloroethane	50.00	28.01	56		28 - 100
Nitrobenzene	50.00	39.34	79		20 - 131
Hexachlorobutadiene	50.00	29.55	59		29 - 103
2,4,6-Trichlorophenol	50.00	31.73	63		46 - 113
2,4,5-Trichlorophenol	50.00	35.75	72		41 - 119
2,4-Dinitrotoluene	50.00	40.21	80		52 - 119
Hexachlorobenzene	50.00	29.78	60		52 - 116
Pentachlorophenol	50.00	36.50	73		20 - 100

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
Pyridine	50.00	25.94	52	2	30		20 - 100
1,4-Dichlorobenzene	50.00	31.14	62	1	30		25 - 100
2-Methylphenol	50.00	40.82	82	7	30		25 - 100
3 & 4-Methylphenol	100.0	64.18	64	10	30		24 - 100
Hexachloroethane	50.00	27.83	56	0.7	30		28 - 100
Nitrobenzene	50.00	37.45	75	5	30		20 - 131
Hexachlorobutadiene	50.00	29.35	59	0.7	30		29 - 103
2,4,6-Trichlorophenol	50.00	30.74	61	3	30		46 - 113
2,4,5-Trichlorophenol	50.00	33.45	67	7	30		41 - 119
2,4-Dinitrotoluene	50.00	36.23	72	10	30		52 - 119
Hexachlorobenzene	50.00	29.42	59	1	30		52 - 116
Pentachlorophenol	50.00	32.87	66	10	30		20 - 100

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270D

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082214-MS1 % Solid: Matrix: Soil Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Pyridine	50.00	5.00 U	19.02	38		20 - 100
1,4-Dichlorobenzene	50.00	5.00 U	24.25	48		25 - 100
2-Methylphenol	50.00	10.0 U	29.97	60		25 - 100
3 & 4-Methylphenol	100.0	10.0 U	51.16	51		24 - 100
Hexachloroethane	50.00	5.00 U	20.72	41		28 - 100
Nitrobenzene	50.00	5.00 U	27.22	54		20 - 131
Hexachlorobutadiene	50.00	5.00 U	22.05	44		29 - 103
2,4,6-Trichlorophenol	50.00	10.0 U	23.18	46		46 - 113
2,4,5-Trichlorophenol	50.00	10.0 U	25.63	51		41 - 119
2,4-Dinitrotoluene	50.00	5.00 U	30.82	62		52 - 119
Hexachlorobenzene	50.00	5.00 U	28.65	57		52 - 116
Pentachlorophenol	50.00	10.0 U	32.62	65		20 - 100

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Pyridine	50.00	24.94	50	27		30	20 - 100
1,4-Dichlorobenzene	50.00	28.09	56	15		30	25 - 100
2-Methylphenol	50.00	35.96	72	18		30	25 - 100
3 & 4-Methylphenol	100.0	58.39	58	13		30	24 - 100
Hexachloroethane	50.00	24.41	49	16		30	28 - 100
Nitrobenzene	50.00	33.03	66	19		30	20 - 131
Hexachlorobutadiene	50.00	27.13	54	21		30	29 - 103
2,4,6-Trichlorophenol	50.00	28.48	57	21		30	46 - 113
2,4,5-Trichlorophenol	50.00	29.77	60	15		30	41 - 119
2,4-Dinitrotoluene	50.00	34.53	69	11		30	52 - 119
Hexachlorobenzene	50.00	28.55	57	0.4		30	52 - 116
Pentachlorophenol	50.00	30.66	61	6		30	20 - 100

SURROGATE STANDARD RECOVERY

SW8270D

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: 5972hp66

Sequence: 1H24009 Calibration: 1082504

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Blank (1082214-BLK1) ug/L Lab File ID: 1082214-BLK1A66 Analyzed: 08/24/11 12:38				
2-Fluorophenol	100.0	51	11 - 110	
Phenol-d5	100.0	41	10 - 110	
Nitrobenzene-d5	50.00	64	35 - 110	
2-Fluorobiphenyl	50.00	59	45 - 110	
2,4,6-Tribromophenol	100.0	61	44 - 131	
Terphenyl-d14	50.00	72	49 - 120	
Blank (1082214-BLK2) ug/L Lab File ID: 1082214-BLK2A66 Analyzed: 08/24/11 13:14				
2-Fluorophenol	100.0	52	11 - 110	
Phenol-d5	100.0	45	10 - 110	
Nitrobenzene-d5	50.00	73	35 - 110	
2-Fluorobiphenyl	50.00	63	45 - 110	
2,4,6-Tribromophenol	100.0	62	44 - 131	
Terphenyl-d14	50.00	72	49 - 120	
LCS (1082214-BS1) ug/L Lab File ID: 1082214-BS1A66.d Analyzed: 08/24/11 13:50				
2-Fluorophenol	100.0	57	11 - 110	
Phenol-d5	100.0	49	10 - 110	
Nitrobenzene-d5	50.00	78	35 - 110	
2-Fluorobiphenyl	50.00	66	45 - 110	
2,4,6-Tribromophenol	100.0	74	44 - 131	
Terphenyl-d14	50.00	74	49 - 120	
LCS Dup (1082214-BSD1) ug/L Lab File ID: 1082214-BSD1A66 Analyzed: 08/24/11 14:26				
2-Fluorophenol	100.0	54	11 - 110	
Phenol-d5	100.0	46	10 - 110	
Nitrobenzene-d5	50.00	73	35 - 110	
2-Fluorobiphenyl	50.00	63	45 - 110	
2,4,6-Tribromophenol	100.0	64	44 - 131	
Terphenyl-d14	50.00	71	49 - 120	

SURROGATE STANDARD RECOVERY

SW8270D

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: 5972hp66

Sequence: 1H24009 Calibration: 1082504

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Matrix Spike (1082214-MS1) ug/L Lab File ID: 1082214-MS1A66.d Analyzed: 08/24/11 15:01				
2-Fluorophenol	100.0	42	11 - 110	
Phenol-d5	100.0	36	10 - 110	
Nitrobenzene-d5	50.00	53	35 - 110	
2-Fluorobiphenyl	50.00	47	45 - 110	
2,4,6-Tribromophenol	100.0	52	44 - 131	
Terphenyl-d14	50.00	70	49 - 120	
Matrix Spike Dup (1082214-MSD1) ug/L Lab File ID: 1082214-MSD1A66 Analyzed: 08/24/11 15:37				
2-Fluorophenol	100.0	51	11 - 110	
Phenol-d5	100.0	41	10 - 110	
Nitrobenzene-d5	50.00	66	35 - 110	
2-Fluorobiphenyl	50.00	58	45 - 110	
2,4,6-Tribromophenol	100.0	64	44 - 131	
Terphenyl-d14	50.00	70	49 - 120	
1R-45009 (1108090-01) ug/L Lab File ID: 1108090-01A66.d Analyzed: 08/24/11 16:13				
2-Fluorophenol	100.0	40	11 - 110	
Phenol-d5	100.0	33	10 - 110	
Nitrobenzene-d5	50.00	52	35 - 110	
2-Fluorobiphenyl	50.00	53	45 - 110	
2,4,6-Tribromophenol	100.0	60	44 - 131	
Terphenyl-d14	50.00	69	49 - 120	

CompuChem
A Division Of
Liberty Analytical Corp.
8/29/2011

PAUL LAMMERS
CDM FEDERAL PROGRAMS CORP.
60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108090

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem
a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER
OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108090

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108090

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108090-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55
1108090-02	ZHEBLKDY	Soil	08/19/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Laboratory: COMPUCHEM

SDG: 1108090

Client Sample Id:	Lab Sample Id:
1R-45009	1108090-01
ZHEBLKDY	1108090-02

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Patricia A Murphy Name: Patricia A Murphy

Date: 8-25-11 Title: Senior Scientist

CompuChem
A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 1108090
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: IR-45009

The 1 soil sample listed above was received intact, properly refrigerated at 0.2°C, with proper documentation, in sealed shipping containers, on August 19, 2011. The sample was scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311) was used to prepare the sample and Method 8260B was used to analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 1108090 are included in the sample data sections.

Analysis holding time requirements were met for the sample. The pH value of this sample was equal to 5. There were no volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in this sample. All of the system monitoring compounds met recovery criteria in the analyses of the sample. All of the internal standards met response and retention time criteria in the analyses of the sample.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. All QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were not performed on the process files associated with this SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met all quality control criteria. IR-45009 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A. Murphy
Senior Scientist
August 25, 2011

GC and GC/MS Column and Trap Specifications Table

SDG #: 1108090

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-5MS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.25	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
√	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
√	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Pinnacle II Biphenyl	4.6	5.0	15 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

GC and GC/MS Volatiles Laboratory		
Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C	
	* 1.2 cm Carbopack B	
√ Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)	
	* 6 cm of Carboxen 1000 (Carbon molecular sieves)	
	* 1 cm of Carboxen 1001 (Carbon molecular sieves)	

Rev. 30

* This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semivolatiles, pesticides, and Aroclors by the requested analytical methods. Please see the SDG Narrative(s) for the specific fraction(s) relative to this SDG.

Note: This table also contains HPLC columns.

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CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.). This policy is also applicable to non-CLP data packages.

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC/HPLC chemists. An Extracted Ion Current Profile (EICP) or a GC/HPLC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC/HPLC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak. The most common reasons for performing manual integrations/editing are: the compound was not found by the automatic integration routine, the compound was incorrectly integrated by the automatic integration routine, and the co-eluting compounds were incorrectly integrated by the automatic integration routine.

H - Denotes that the data reviewer, GC/MS operator, or GC/HPLC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate GC/MS library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

These codes will appear in the GC/MS and GC/HPLC raw data.

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DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on the appropriate reporting form for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches ≥ 85%), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the lower of the two values is reported and flagged with a P on the reporting form. When the RPD is equal to or less than 40%, our policy is to also report the lower of the two values, although the choice could be a project specific issue. These SW-846 policies are consistent with Method 8000C. If Method 8000B is required, the higher of the two values is reported. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on the appropriate reporting form for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the appropriate reporting form for the more diluted sample, and **all** reported concentrations on that form are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate reporting forms are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single reporting form.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor. The "S" flag is not utilized for non CLP analyses.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Page 1 of 1

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-02	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.5°C SN00150RGUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen CDM	8/18/11	[signature]	8/19/11	0955						

24140

CHAIN OF CUSTODY

Page 1 of 1

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501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4340

Courier: UPS
Airbill No.: 1ZA1R1112310020152
Sampling Complete? Y or N

Company Name: CDM Federal Programs	Project Name: STC Well 12A Superfund Site
Address: 14432 SE Eastgate Way, Suite 100	Sampling Location: Tacoma, WA
City: Bellevue State: WA Zip: 98007	Turnaround time: 24-hour for aqueos VOCs, Normal 14-day for all others
Project Contact: Mary Lou Fox	Batch QC or Project Specific? If Specific, which Sample ID? Batch QC
Phone#: (425) 519-8300	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: AAL	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrix: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Sample Number	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other None	VOCs EPA 8260B	Alkalinity EPA 310.2	TOC SM5310A	Anions EPA 300.0	Dissolved RSK 175	
1108124-01 1108124-01	20110822-VP102-985-W	08/22/11	1450	GW	8	5			2		1	✓	✓	✓	✓	✓	1108125-01
1108121-02	20110822-TB-10	08/22/11	—	TB	3	3						✓					

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Relinquished by: [signature]	Date/Time: 08/22/11 1600	Received by: [signature]	Date/Time: 8/23/11 0824
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? (Y) or N If yes, where? HLS-Houston	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab - Pink copy for customer

TKeun: 880015

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Liberty Analytical Corp.

Sample ID Cross Reference

Project: WELL12A SUPERFUND/TO-11/24HR

Work Order	Sample #	Field ID	Sample Date	Rec Date	DueDate	Chain of Custody ID
1108121	1108121-01	VP102-98.5-W	08/22/2011	08/24/2011	08/25/2011	20110822-VP102-98.5-W
1108121	1108121-02	20110822-TB-10	08/22/2011	08/24/2011	08/25/2011	

VOA Internal Chain of Custody Sheet

Matrix Soil **Batch**: 1081909 **Status:** Batched **Analysis**: VOA-8260B TCLP

Lab Id	Client Id	Received	Container	Extraction
1108090-01 A	1R-45009	08/19/11	4c_8OZ WM Glass, coc	SW 5035/5035A

#5	8-23-11	JAD	8-23-11
Relinquished By	Date/Time	Received By	Date/Time
JAD	8-23-11	#5	8-23-11
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

AM 8-24-11

Dwight
Assigned To

2693
Employee ID Number

PREPARATION BENCH SHEET

1082209

TCLP-ZHE

Prepared using: EXTRACTIONS - EPA 1311

Matrix: Soil

Date/Time Extracted: 8-22-11/2240

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Lab Number	Client ID	QCType	Particle Reduct. Done (Y/N)	Sample Weight (g)	Final Leach pH Value	Final Volume (mL)	Percent Solid	Comments
1082209-BLK1	ZHEBLKDY	Blank	N/A	N/A	N/A	475	N/A	
1108090-01	1R-45009	Sample	N	25.0		445	100	D.D. 8-23-11
1108095-01	IDWA	Sample	N	25.0		435	100	
1108095-02	IDWB	Sample	N	25.0		490	100	

LOADED TUMBLER CALIB.CHECK (MUST BE 30 +/- 2 RPM)	
TUMBLER #	CALC. RPM
1A	31
	D.D. 8-22-11
(COUNT RPM FOR 30 SEC. AND MULTIPLY NUMBER BY 2 TO CALCULATE RPM)	

ROTATION TIME ONLY

Date/Time Started: 8-22-11/2240 D.D. 8-22-11

Date/Time Stopped: 8-23-11/1555

Room Temp: Min 24 Max 25

Balance ID: SARTORIUS B-410

ZHE's checked to ensure pressure maintained? (Y) N

Ext Fluid 1 pH: 4.92 (4.93 +/- 0.05)

ZHE BLK Body #: E

Final Vol Verified: D. Dickens

Reviewed By: [signature]

Filter Manufacturer: ENV. EXPRESS Filter Lot: 8320701

Manuf. and lot # of reagents/solvents used: ZHEFluid: 2XX10-769-3, HCL: 73819

13

EXTRACT COC

1082209

COMPUCHEM

Prepared using: EXTRACTIONS - EPA 1311

Matrix: Soil

Lab Number	Client ID	Analysis
1082209-BLK1	ZHEBLKDY	QC
1108090-01	1R-45009	TCLP-ZHE
1108095-01	IDWA	TCLP-ZHE
1108095-02	IDWB	TCLP-ZHE

D. Dickens	8-23-11 1600	FRG #5 GC/MS	8-23-11 1600
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

WORK ORDER

Printed: 8/19/2011 2:11:26PM

1108090

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108090** **CASE:**	**Status:**	**Received**

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 13:37

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*MS/MSD WILL REQUIRE TWO LEACHATES FOR THE SAMPLE.*1311TCLP...TCLP METALS 6010C/7470A*TCLP PEST 8081B*TCLP HERB 8151A*TCLP SVOA 8270D*TCLP VOA 8260B*

Analysis	Due	TAT	Expires	Received	Comments
1108090-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern				**MS/MSD**	
6010C METALS-TCLP	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	
7470A Hg TCLP	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
GC-8081B PEST TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8081 TCLP (08-19-11)
GC-8151A-HERBICIDE-TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = GC- 8151 TCLP (08-19-11)
SVOC 8270D TCLP	08/26/2011 16:00	7	08/25/2011 00:00	08/19/2011 09:55	SubList = SV- TCLP (08-19-11)
TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
TCLP-ZHE	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	
VOA-8260B TCLP	08/26/2011 16:00	7	09/01/2011 00:00	08/19/2011 09:55	SubList = VOA- 8260ZHE (08-19-11)

ANALYSIS DATA SHEET

SW 8260B

1R-45009

Client: CDM FEDERAL PROGRAMS CORP. SDG 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Preparation: SW 5030A/5030B File ID: 1108090-0191.d Sampled: 08/18/11 00:00

Initial/Final: 5mL / 5mL Lab ID: 1108090-01 Received: 08/19/11 09:55

Dilution: 5 pH: 5 Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 18:15

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride		2.4	25	*U*
75-35-4	1,1-Dichloroethene		2.7	25	*U*
78-93-3	2-Butanone		7.5	63	*U*
67-66-3	Chloroform		1.4	25	*U*
56-23-5	Carbon tetrachloride		1.6	25	*U*
107-06-2	1,2-Dichloroethane		1.2	25	*U*
71-43-2	Benzene		1.4	25	*U*
79-01-6	Trichloroethene		1.4	25	*U*
127-18-4	Tetrachloroethene		2.1	25	*U*
108-90-7	Chlorobenzene		1.4	25	*U*

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	54.47	109	66 - 128	
1,2-Dichloroethane-d4	50.00	56.43	113	55 - 147	
Toluene-d8	50.00	54.16	108	50 - 150	
Bromofluorobenzene	50.00	55.65	111	70 - 132	

Environmental Testing Laboratories

CompuChem

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ANALYSIS DATA SHEET

SW 8260B

ZHEBLKDY

Client: CDM FEDERAL PROGRAMS CORP. SDG 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Soil Preparation: SW 5030A/5030B File ID: 1108090-0291.d Sampled: 08/19/11 00:00

Initial/Final: 5mL / 5mL Lab ID: 1108090-02 Received: 08/19/11 09:55

Dilution: 1 pH: 5 Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 17:47

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride		0.48	5.0	*U*
75-35-4	1,1-Dichloroethene		0.53	5.0	*U*
78-93-3	2-Butanone		1.5	13	*U*
67-66-3	Chloroform		0.27	5.0	*U*
56-23-5	Carbon tetrachloride		0.31	5.0	*U*
107-06-2	1,2-Dichloroethane		0.23	5.0	*U*
71-43-2	Benzene		0.28	5.0	*U*
79-01-6	Trichloroethene		0.28	5.0	*U*
127-18-4	Tetrachloroethene		0.42	5.0	*U*
108-90-7	Chlorobenzene		0.27	5.0	*U*

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	55.49	111	66 - 128	
1,2-Dichloroethane-d4	50.00	57.73	115	55 - 147	
Toluene-d8	50.00	53.87	108	50 - 150	
Bromofluorobenzene	50.00	56.76	114	70 - 132	

ANALYSIS DATA SHEET

SW 8260B

VBLKLX

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: SW 5030A/5030B File ID: 1082326-BLK191.d QC Type: Blank

Initial/Final: 5mL / 5mL Lab ID: 1082326-BLK1 Column ID: SPB-624

Dilution: 1 pH: Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 15:39

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride		0.48	5.0	U
75-35-4	1,1-Dichloroethene		0.53	5.0	U
78-93-3	2-Butanone		1.5	13	U
67-66-3	Chloroform		0.27	5.0	U
56-23-5	Carbon tetrachloride		0.31	5.0	U
107-06-2	1,2-Dichloroethane		0.23	5.0	U
71-43-2	Benzene		0.28	5.0	U
79-01-6	Trichloroethene		0.28	5.0	U
127-18-4	Tetrachloroethene		0.42	5.0	U
108-90-7	Chlorobenzene		0.27	5.0	U

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	51.64	103	66 - 128	
1,2-Dichloroethane-d4	50.00	52.92	106	55 - 147	
Toluene-d8	50.00	51.37	103	50 - 150	
Bromofluorobenzene	50.00	52.57	105	70 - 132	

ANALYSIS DATA SHEET

SW 8260B

VLXLCS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: SW 5030A/5030B File ID: 1082326-BS191.d QC Type: LCS

Initial/Final: 5mL / 5mL Lab ID: 1082326-BS1 Column ID: SPB-624

Dilution: 1 pH: Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 16:40

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride	55.33	0.48	5.0	
75-35-4	1,1-Dichloroethene	53.23	0.53	5.0	
78-93-3	2-Butanone	139.1	1.5	13	
67-66-3	Chloroform	53.34	0.27	5.0	
56-23-5	Carbon tetrachloride	54.22	0.31	5.0	
107-06-2	1,2-Dichloroethane	54.47	0.23	5.0	
71-43-2	Benzene	53.53	0.28	5.0	
79-01-6	Trichloroethene	50.90	0.28	5.0	
127-18-4	Tetrachloroethene	42.04	0.42	5.0	
108-90-7	Chlorobenzene	51.38	0.27	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	49.55	99	66 - 128	
1,2-Dichloroethane-d4	50.00	52.06	104	55 - 147	
Toluene-d8	50.00	50.04	100	50 - 150	
Bromofluorobenzene	50.00	50.01	100	70 - 132	

ANALYSIS DATA SHEET

SW 8260B

VLXLCSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: SW 5030A/5030B File ID: 1082326-BSD191.d QC Type: LCS Dup

Initial/Final: 5mL / 5mL Lab ID: 1082326-BSD1 Column ID: SPB-624

Dilution: 1 pH: Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 17:08

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride	52.85	0.48	5.0	
75-35-4	1,1-Dichloroethene	52.89	0.53	5.0	
78-93-3	2-Butanone	130.0	1.5	13	
67-66-3	Chloroform	52.15	0.27	5.0	
56-23-5	Carbon tetrachloride	52.28	0.31	5.0	
107-06-2	1,2-Dichloroethane	53.69	0.23	5.0	
71-43-2	Benzene	52.33	0.28	5.0	
79-01-6	Trichloroethene	50.16	0.28	5.0	
127-18-4	Tetrachloroethene	40.02	0.42	5.0	
108-90-7	Chlorobenzene	50.80	0.27	5.0	

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	48.78	98	66 - 128	
1,2-Dichloroethane-d4	50.00	50.67	101	55 - 147	
Toluene-d8	50.00	49.57	99	50 - 150	
Bromofluorobenzene	50.00	48.65	97	70 - 132	

ANALYSIS DATA SHEET

SW 8260B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: SW 5030A/5030B File ID: 1082326-MS191.d QC Type: Matrix Spike

Initial/Final: 5mL / 5mL Lab ID: 1082326-MS1 Column ID: SPB-624

Dilution: 5 pH: Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 18:43

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride	315.2	2.4	25	D
75-35-4	1,1-Dichloroethene	309.5	2.7	25	D
78-93-3	2-Butanone	804.7	7.5	63	D
67-66-3	Chloroform	302.8	1.4	25	D
56-23-5	Carbon tetrachloride	307.7	1.6	25	D
107-06-2	1,2-Dichloroethane	303.6	1.2	25	D
71-43-2	Benzene	305.5	1.4	25	D
79-01-6	Trichloroethene	289.2	1.4	25	D
127-18-4	Tetrachloroethene	224.5	2.1	25	D
108-90-7	Chlorobenzene	287.4	1.4	25	D

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	52.16	104	66 - 128	
1,2-Dichloroethane-d4	50.00	56.45	113	55 - 147	
Toluene-d8	50.00	51.37	103	50 - 150	
Bromofluorobenzene	50.00	51.56	103	70 - 132	

ANALYSIS DATA SHEET

SW 8260B

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: Water Extraction: SW 5030A/5030B File ID: 1082326-MSD191.d QC Type: Matrix Spike Dup

Initial/Final: 5mL / 5mL Lab ID: 1082326-MSD1 Column ID: SPB-624

Dilution: 5 pH: Prepared: 08/23/11 15:39

% Moisture: NA Analyzed: 08/23/11 19:12

Batch: 1082326 Sequence: 1H23010 Calibration: 1082302 Instrument: 5975hpms91

CAS NO.	COMPOUND	CONC.(ug/L)	MDL	RL	Q
75-01-4	Vinyl chloride	316.2	2.4	25	D
75-35-4	1,1-Dichloroethene	311.7	2.7	25	D
78-93-3	2-Butanone	680.4	7.5	63	D
67-66-3	Chloroform	300.7	1.4	25	D
56-23-5	Carbon tetrachloride	314.0	1.6	25	D
107-06-2	1,2-Dichloroethane	290.9	1.2	25	D
71-43-2	Benzene	304.5	1.4	25	D
79-01-6	Trichloroethene	298.5	1.4	25	D
127-18-4	Tetrachloroethene	233.9	2.1	25	D
108-90-7	Chlorobenzene	294.7	1.4	25	D

SURROGATE RECOVERY RESULTS	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.00	52.40	105	66 - 128	
1,2-Dichloroethane-d4	50.00	54.00	108	55 - 147	
Toluene-d8	50.00	53.33	107	50 - 150	
Bromofluorobenzene	50.00	53.02	106	70 - 132	

PREPARATION BATCH SUMMARY

SW 8260B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082326 Matrix: Water Preparation: SW 5030A/5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
VBLKLX	1082326-BLK1	08/23/11 15:39	5.00	5.00
VLXLCS	1082326-BS1	08/23/11 15:39	5.00	5.00
VLXLCSD	1082326-BSD1	08/23/11 15:39	5.00	5.00
1R-45009MS	1082326-MS1	08/23/11 15:39	5.00	5.00
1R-45009MSD	1082326-MSD1	08/23/11 15:39	5.00	5.00
1R-45009	1108090-01	08/23/11 15:39	5.00	5.00
ZHEBLKDY	1108090-02	08/23/11 15:39	5.00	5.00

LCS / LCS DUPLICATE RECOVERY

SW 8260B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082326-BS1 Matrix: Water Client ID: VLXLCS Batch: 1082326

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	Q	QC LIMITS REC.
Vinyl chloride	50.00	55.33	111		54 - 136
1,1-Dichloroethene	50.00	53.23	106		72 - 129
2-Butanone	125.0	139.1	111		64 - 127
Chloroform	50.00	53.34	107		65 - 133
Carbon tetrachloride	50.00	54.22	108		70 - 139
1,2-Dichloroethane	50.00	54.47	109		67 - 133
Benzene	50.00	53.53	107		66 - 130
Trichloroethene	50.00	50.90	102		72 - 130
Tetrachloroethene	50.00	42.04	84		78 - 136
Chlorobenzene	50.00	51.38	103		76 - 121

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
Vinyl chloride	50.00	52.85	106	5	25		54 - 136
1,1-Dichloroethene	50.00	52.89	106	0.6	14		72 - 129
2-Butanone	125.0	130.0	104	7	25		64 - 127
Chloroform	50.00	52.15	104	2	25		65 - 133
Carbon tetrachloride	50.00	52.28	105	4	25		70 - 139
1,2-Dichloroethane	50.00	53.69	107	1	25		67 - 133
Benzene	50.00	52.33	105	2	14		66 - 130
Trichloroethene	50.00	50.16	100	1	14		72 - 130
Tetrachloroethene	50.00	40.02	80	5	25		78 - 136
Chlorobenzene	50.00	50.80	102	1	14		76 - 121

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW 8260B

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108090 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082326-MS1 % Solid: NA Matrix: Water Lab Source ID: 1108090-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Vinyl chloride	250.0	25 U	315.2 D	126		54 - 136
1,1-Dichloroethene	250.0	25 U	309.5 D	124		72 - 129
2-Butanone	625.0	63 U	804.7 D	129	*	64 - 127
Chloroform	250.0	25 U	302.8 D	121		65 - 133
Carbon tetrachloride	250.0	25 U	307.7 D	123		70 - 139
1,2-Dichloroethane	250.0	25 U	303.6 D	121		67 - 133
Benzene	250.0	25 U	305.5 D	122		69 - 130
Trichloroethene	250.0	25 U	289.2 D	116		72 - 130
Tetrachloroethene	250.0	25 U	224.5 D	90		78 - 136
Chlorobenzene	250.0	25 U	287.4 D	115		76 - 121

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Vinyl chloride	250.0	316.2 D	126	0.3		25	54 - 136
1,1-Dichloroethene	250.0	311.7 D	125	0.7		14	72 - 129
2-Butanone	625.0	680.4 D	109	17		25	64 - 127
Chloroform	250.0	300.7 D	120	0.7		25	65 - 133
Carbon tetrachloride	250.0	314.0 D	126	2		25	70 - 139
1,2-Dichloroethane	250.0	290.9 D	116	4		25	67 - 133
Benzene	250.0	304.5 D	122	0.3		14	69 - 130
Trichloroethene	250.0	298.5 D	119	3		14	72 - 130
Tetrachloroethene	250.0	233.9 D	94	4		25	78 - 136
Chlorobenzene	250.0	294.7 D	118	3		14	76 - 121

SURROGATE STANDARD RECOVERY

Client:

Project:

SDG: Instrument:

Sequence: Calibration:

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q

SURROGATE STANDARD RECOVERY

SW 8260B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: 5975hpms91

Sequence: 1H23010 Calibration: 1082302

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Blank (1082326-BLK1) ug/L Lab File ID: 1082326-BLK191.c Analyzed: 08/23/11 15:39				
Dibromofluoromethane	50.00	103	66 - 128	
1,2-Dichloroethane-d4	50.00	106	55 - 147	
Toluene-d8	50.00	103	50 - 150	
Bromofluorobenzene	50.00	105	70 - 132	
LCS (1082326-BS1) ug/L Lab File ID: 1082326-BS191.d Analyzed: 08/23/11 16:40				
Dibromofluoromethane	50.00	99	66 - 128	
1,2-Dichloroethane-d4	50.00	104	55 - 147	
Toluene-d8	50.00	100	50 - 150	
Bromofluorobenzene	50.00	100	70 - 132	
LCS Dup (1082326-BSD1) ug/L Lab File ID: 1082326-BSD191.d Analyzed: 08/23/11 17:08				
Dibromofluoromethane	50.00	98	66 - 128	
1,2-Dichloroethane-d4	50.00	101	55 - 147	
Toluene-d8	50.00	99	50 - 150	
Bromofluorobenzene	50.00	97	70 - 132	
ZHEBLKDY (1108090-02) ug/L Lab File ID: 1108090-0291.d Analyzed: 08/23/11 17:47				
Dibromofluoromethane	50.00	111	66 - 128	
1,2-Dichloroethane-d4	50.00	115	55 - 147	
Toluene-d8	50.00	108	50 - 150	
Bromofluorobenzene	50.00	114	70 - 132	
1R-45009 (1108090-01) ug/L Lab File ID: 1108090-0191.d Analyzed: 08/23/11 18:15				
Dibromofluoromethane	50.00	109	66 - 128	
1,2-Dichloroethane-d4	50.00	113	55 - 147	
Toluene-d8	50.00	108	50 - 150	
Bromofluorobenzene	50.00	111	70 - 132	

SURROGATE STANDARD RECOVERY

SW 8260B

Client: CDM FEDERAL PROGRAMS CORP.

Project: LIBBY OU4FIELD/MT-TCLP-7DAY

SDG: 1108090 Instrument: 5975hpms91

Sequence: 1H23010 Calibration: 1082302

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	Q
Matrix Spike (1082326-MS1) ug/L Lab File ID: 1082326-MS191.d Analyzed: 08/23/11 18:43				
Dibromofluoromethane	50.00	104	66 - 128	
1,2-Dichloroethane-d4	50.00	113	55 - 147	
Toluene-d8	50.00	103	50 - 150	
Bromofluorobenzene	50.00	103	70 - 132	
Matrix Spike Dup (1082326-MSD1) ug/L Lab File ID: 1082326-MSD191.d Analyzed: 08/23/11 19:12				
Dibromofluoromethane	50.00	105	66 - 128	
1,2-Dichloroethane-d4	50.00	108	55 - 147	
Toluene-d8	50.00	107	50 - 150	
Bromofluorobenzene	50.00	106	70 - 132	

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-02	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.50c SN00015 (IR GUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen - CDM	8/18/11	[signature]	8/19/11	0955						

WORK ORDER

Printed: 8/19/2011 18:54:20

1108091

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108091** **CASE:**	**Status:**	**Received**

Report To:

CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:

CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 14:11

J & B Flags?: **YES**	TICS?: **NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108090-01 FOR QC*RIC

Analysis	Due	TAT	Expires	Received	Comments
1108091-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern					**MS/MSD**
CORROSIVITY 9040B	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
IGNITABILITY 1010A	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
REACTIVE CYANIDE 9014	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
REACTIVE SULFIDE 9034	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
Solids, Dry Weight	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	

CompuChem

A Division Of

Liberty Analytical Corp.

8/31/2011

PAUL LAMMERS

CDM FEDERAL PROGRAMS CORP.

60 PORT BLVD, STE 228

LIBBY, MT 59923

Subject:

Report of Data - Project: LIBBY OU4FIELD/MT-TCLP-7DAY WorkOrder: 1108091

Attn.: PAUL LAMMERS

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Matthew R. Howard

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER

OF PAGES _____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CDM FEDERAL PROGRAMS CORP. **Work:** 1108091

Project: LIBBY OU4FIELD/MT-TCLP-7DAY **Sdg:** 1108091

Lab ID	Client ID	Matrix	Date Sampled	Date Received
1108091-01	1R-45009	Soil	08/18/2011 00:00	08/19/2011 09:55

ANALYSES DATA PACKAGE COVER PAGE

Client: CDM FEDERAL PROGRAMS CORP.
Project: LIBBY OU4FIELD/MT-TCLP-7DAY
Laboratory: COMPUCHEM
SDG: 1108091

Client Sample Id:	Lab Sample Id:
1R-45009	1108091-01

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the Electronic Data Deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: for Susan Bass Name: Joseph Mohn

Date: 08.31.2011 Title: Wet Chemistry Supervisor

Environmental Testing Laboratories
CompuChem
A Division Of
Liberty Analytical Corp.

CompuChem
A Division Of
Liberty Analytical Corp.

SDG NARRATIVE
SDG # 1108091
Client: CDM FEDERAL PROGRAMS CORP.
Project: LIBBY OU4FIELD/MT-TCLP-7DAY

The 1 solid sample was received intact and refrigerated at 0.5°C, with proper documentations, in sealed shipping containers, on August 19, 2011. The sample was scheduled for the requested analyses of the Wet Chemistry fraction. The sample was analyzed, in accordance with current EPA methods for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

INSTRUMENTAL QUALITY CONTROL:
All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS, LCSD, & Blank) were found to be within acceptable ranges. The field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
1R-45009 *(1108091-01)* was requested to prepare the matrix spike/matrix spike duplicate. The matrix spike/matrix spike duplicate were found to be inside control limits except the matrix spike duplicate for reactive cyanide.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W. Bass
Senior Chemist
August 31, 2011

WET CHEMISTRY DATA REPORTING QUALIFIERS

On the appropriate reporting form, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. The qualifiers used are:

U : This flag indicates the compound was analyzed for, not detected and is reported as less than the Method Detection Limit (MDL) (or as defined by the client). The Reporting Limit (RL), or Limit of Quantitation (LOQ), and the MDL will be adjusted to reflect any dilution or concentration of the sample and, for soils, the percent moisture.

J : This flag indicates the reported result is an estimated value. The flag is used when an analyte is detected and the result is less than the adjusted RL/LOQ but equal to or greater than the MDL.

Q : This flag denotes that one or more quality control criteria have failed (e.g., LCS recovery, Continuing Calibration Verification, or CCV) and reanalyses can't be performed. The Q flag is applied to all specific analyte(s) in all samples associated with the failed quality control criteria.

B : This flag is used when the analyte is found in the associated method or calibration blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

D: This flag is applied to an analyte when the reported result is based on a dilution.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

The extensions: D, S, and SD are added to the end of the Client ID and represent the following:

D – Matrix Duplicate
S – Matrix Spike
SD – Matrix Spike Duplicate

Revision 0 (03-15-2011)

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479776
No of Samples: 1

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20887
Lab: CompuChem
Lab Address: 501 Madison Ave
Lab_Address2: Cary, NC 27513

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
1108090-01	1R-45009	AL2	8/18/2011	Soil	5	TCLP		RUSH
	1R-45009	AL3	8/18/2011	Soil	5	Corrosivity		RUSH
1108090-04	1R-45009	AL4	8/18/2011	Soil	5	Reactivity		RUSH
	1R-45009	AL5	8/18/2011	Soil	5	Ignitability		RUSH

Special Instructions: Total of 12 bottles 0.50c SN00150RGUN)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D. Haugen CDM	8/18/11	[signature]	8/19/11	0955						

4

WORK ORDER

Printed: 8/31/2011 3:13:28PM

1108091

COMPUCHEM

Client:	**CDM FEDERAL PROGRAMS CORP.**	**Project Manager:**	**Matt Howard**
Project:	**LIBBY OU4FIELD/MT-TCLP-7DAY**	**Project Number:**	**LIBBY OU4FIELD/MT-TCLP-7DAY**
SDG:	**1108091** **CASE:**	**Status:**	**Reported**

Report To:
CDM FEDERAL PROGRAMS CORP.
PAUL LAMMERS
60 PORT BLVD, STE 228
LIBBY, MT 59923
Phone: -
Fax: -

Invoice To:
CDM FEDERAL PROGRAMS CORP.
SUBCONTRACT MANAGER
14420 ALBEMARLE POINT PLACE, SUITE 210
CHANTILLY, VA 20151
Phone :-
Fax: -

Date Due:	08/26/2011 00:00 (7 day TAT)		
Received By:	Matt Howard	Date Received:	08/19/2011 09:55
Logged In By:	Matt Howard	Date Logged In:	08/19/2011 14:11

J & B Flags?: **YES**	TICS?:**NO**	Deliverable: **Style 3**	EDD : **68) LATA EXCEL**
Metals ND to? **MDL**	Spike Level: **FULL Spike**		

USE 1108091-01 FOR QC*RIC

Analysis	Due	TAT	Expires	Received	Comments
1108091-01 1R-45009 [Soil] Sampled 08/18/2011 00:00 Eastern					**MS/MSD**
CORROSIVITY 9040B	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
IGNITABILITY 1010A	08/26/2011 16:00	7	09/15/2011 00:00	08/19/2011 09:55	
REACTIVE CYANIDE 9014	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
REACTIVE SULFIDE 9034	08/26/2011 16:00	7	08/30/2011 00:00	08/19/2011 09:55	
Solids, Dry Weight	08/26/2011 16:00	7	02/14/2012 00:00	08/19/2011 09:55	

METHOD DETECTION AND REPORTING LIMITS

9014

Laboratory: COMPUCHEM **SDG:** 1108091

Client: CDM FEDERAL PROGRAMS CORP. **Project:** LIBBY OU4FIELD/MT-TCLP-7DAY

Matrix: SOIL **Instrument:**

Analyte	MDL	RL	Units	Method
Reactive Cyanide	1	125.00	mg/kg	9014
Reactive Sulfide	1	125.00	mg/kg	EPA 9034

ANALYSIS DATA SHEET

1R-45009

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1108091-01 % Solid: 93.6 Matrix: Soil Sampled: 08/18/11 Received: 08/19/11

CAS NO.	Analyte	Conc. (pH Units)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
CORROSIVI	Corrosivity-pH	7.17			1		EPA 9040B		8/22/11 9:00
CAS NO.	**Analyte**	**Conc. (mg/kg dry)**	**MDL**	**RL**	**D.F.**	**Q**	**Method**	**Sequence**	**Analyzed**
RCYAN	Reactive Cyanide		1.07	134	1	U	9014		8/30/11 9:00
RSULF	Reactive Sulfide	10.7	1.07	134	1	J	EPA 9034		8/30/11 9:00
CAS NO.	**Analyte**	**Conc. (degree F)**	**MDL**	**RL**	**D.F.**	**Q**	**Method**	**Sequence**	**Analyzed**
IGNIT	Ignitability by Flashpoint	>140			1		EPA 1010A		8/30/11 13:00

ANALYSIS DATA SHEET

LCS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082223-BS1 Matrix: Water

CAS NO.	Analyte	Conc. (degree F)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
IGNIT	Ignitability by Flashpoint	83.3			1		EPA 1010A		8/30/11 13:00

ANALYSIS DATA SHEET

LCSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082223-BSD1 Matrix: Water

CAS NO.	Analyte	Conc. (degree F)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
IGNIT	Ignitability by Flashpoint	82.3			I		EPA 1010A		8/30/11 13:00

ANALYSIS DATA SHEET

PB

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-BLK1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide		1.00	125	1	U	9014		8/30/11 9:00

ANALYSIS DATA SHEET

LCS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	240	1.00	125	1		9014		8/30/11 9:00

ANALYSIS DATA SHEET

LCSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	240	1.00	125	1		9014		8/30/11 9:00

ANALYSIS DATA SHEET

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-MS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg dry)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	240	1.07	134	1		9014		8/30/11 9:00

ANALYSIS DATA SHEET

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-MSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg dry)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RCYAN	Reactive Cyanide	107	1.07	134	1	J	9014		8/30/11 9:00

ANALYSIS DATA SHEET

PB

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-BLK1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide		1.00	125	1	U	EPA 9034		8/30/11 9:00

ANALYSIS DATA SHEET

LCS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	761	1.00	125	1		EPA 9034		8/30/11 9:00

ANALYSIS DATA SHEET

LCSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg wet)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	721	1.00	125	1		EPA 9034		8/30/11 9:00

ANALYSIS DATA SHEET

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-MS1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg dry)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	771	1.07	134	1		EPA 9034		8/30/11 9:00

ANALYSIS DATA SHEET

1R-45009MSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-MSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (mg/kg dry)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
RSULF	Reactive Sulfide	771	1.07	134	1		EPA 9034		8/30/11 9:00

ANALYSIS DATA SHEET

LCS

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082307-BS1 Matrix: Soil

CAS NO.	Analyte	Conc. (pH Units)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
CORROSIVI	Corrosivity-pH	7.29			1		EPA 9040B		8/22/11 9:00

ANALYSIS DATA SHEET

LCSD

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082307-BSD1 Matrix: Soil

CAS NO.	Analyte	Conc. (pH Units)	MDL	RL	D.F.	Q	Method	Sequence	Analyzed
CORROSIVI	Corrosivity-pH	7.29			1		EPA 9040B		8/22/11 9:00

PREPARATION BATCH SUMMARY

EPA 1010A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082223 Matrix: Water Preparation: NO PREP

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (mL)	FINAL VOL/WT (mL)
LCS	1082223-BS1	08/30/11 13:00	1.00	1.00
LCSD	1082223-BSD1	08/30/11 13:00	1.00	1.00
1R-45009	1108091-01	08/30/11 13:00	1.00	1.00

PREPARATION BATCH SUMMARY

9014

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082305 Matrix: Soil Preparation: NO PREP

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (g)	FINAL VOL/WT (mL)
PB	1082305-BLK1	08/30/11 09:00	1.00	1.00
LCS	1082305-BS1	08/30/11 09:00	1.00	1.00
LCSD	1082305-BSD1	08/30/11 09:00	1.00	1.00
1R-45009MS	1082305-MS1	08/30/11 09:00	1.00	1.00
1R-45009MSD	1082305-MSD1	08/30/11 09:00	1.00	1.00
1R-45009	1108091-01	08/30/11 09:00	1.00	1.00

PREPARATION BATCH SUMMARY

EPA 9034

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082306 Matrix: Soil Preparation: NO PREP

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (g)	FINAL VOL/WT (mL)
PB	1082306-BLK1	08/30/11 09:00	1.00	1.00
LCS	1082306-BS1	08/30/11 09:00	1.00	1.00
LCSD	1082306-BSD1	08/30/11 09:00	1.00	1.00
1R-45009MS	1082306-MS1	08/30/11 09:00	1.00	1.00
1R-45009MSD	1082306-MSD1	08/30/11 09:00	1.00	1.00
1R-45009	1108091-01	08/30/11 09:00	1.00	1.00

PREPARATION BATCH SUMMARY

EPA 9040B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Batch: 1082307 Matrix: Soil Preparation: NO PREP

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL/WT (g)	FINAL VOL/WT (mL)
LCS	1082307-BS1	08/22/11 09:00	1.00	1.00
LCSD	1082307-BSD1	08/22/11 09:00	1.00	1.00
1R-45009DUP	1082307-DUP1	08/22/11 09:00	1.00	1.00
1R-45009	1108091-01	08/22/11 09:00	1.00	1.00

DUPLICATES
EPA 9040B

1R-45009DUP

Client: CDM FEDERAL PROGRAMS CORI SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082307-DUP1 % Solid: 94.0 Matrix: Soil Lab Source ID:1108091-01 Source Sample: 1R-45009

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (pH Units)	DUPLICATE CONCENTRATION (pH Units)	RPD %	Q	METHOD
Corrosivity-pH	10	*7.17*	7.19	0.279		EPA 9040B

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

9014

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-MS1 % Solid: 93.0 Matrix: Soil Lab Source ID: 1108091-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC.	Q	QC LIMITS REC.
Reactive Cyanide	1068	134 U	240	22.5		14 - 77

ANALYTE	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Reactive Cyanide	1068	107	9.99	76.9	* *	20	14 - 77

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 9034

1R-45009MS

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-MS1 % Solid: 93.0 Matrix: Soil Lab Source ID: 1108091-01 Source Sample: 1R-45009

ANALYTE	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC.	Q	QC LIMITS REC.
Reactive Sulfide	1068	10.7 J	771	71.1		50 - 175

ANALYTE	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Reactive Sulfide	1068	771	71.1	0.00		20	50 - 175

LCS / LCS DUPLICATE RECOVERY

EPA 1010A

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082223-BS1 Matrix: Water Client ID: LCS Batch: 1082223

ANALYTE	SPIKE ADDED (degree F)	LCS CONCENTRATION (degree F)	LCS % REC.	Q	QC LIMITS REC.
Ignitability by Flashpoint	82.00	83.3	102		90 - 110

ANALYTE	SPIKE ADDED (degree F)	LCSD CONCENTRATION (degree F)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
Ignitability by Flashpoint	82.00	82.3	100	1.21	20		90 - 110

LCS / LCS DUPLICATE RECOVERY

9014

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082305-BS1 Matrix: Soil Client ID: LCS Batch: 1082305

ANALYTE	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC.	Q	QC LIMITS REC.
Reactive Cyanide	1000	240	24.0		14 - 77

ANALYTE	SPIKE ADDED (mg/kg wet)	LCSD CONCENTRATION (mg/kg wet)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Reactive Cyanide	1000	240	24.0	0.00	20		14 - 77

LCS / LCS DUPLICATE RECOVERY

EPA 9034

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082306-BS1 Matrix: Soil Client ID: LCS Batch: 1082306

ANALYTE	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC.	Q	QC LIMITS REC.
Reactive Sulfide	1000	761	76.1		50 - 175

ANALYTE	SPIKE ADDED (mg/kg wet)	LCSD CONCENTRATION (mg/kg wet)	LCSD % REC. #	% RPD #	QC LIMITS		
					RPD	Q	REC.
Reactive Sulfide	1000	721	72.1	5.41	20		50 - 175

LCS / LCS DUPLICATE RECOVERY

EPA 9040B

Client: CDM FEDERAL PROGRAMS CORP. SDG: 1108091 Project: LIBBY OU4FIELD/MT-TCLP-7DAY

Lab ID: 1082307-BS1 Matrix: Soil Client ID: LCS Batch: 1082307

ANALYTE	SPIKE ADDED (pH Units)	LCS CONCENTRATION (pH Units)	LCS % REC.	Q	QC LIMITS REC.
Corrosivity-pH	7.200	7.29	101		90 - 110

ANALYTE	SPIKE ADDED (pH Units)	LCSD CONCENTRATION (pH Units)	LCSD % REC. #	% RPD #	QC LIMITS RPD	Q	REC.
Corrosivity-pH	7.200	7.29	101	0.00	10		90 - 110

ANALYTICAL SUMMARY REPORT

September 08, 2011

CDM-Federal Programs VA
14420 Ablemarle PT PL Ste 210
Chantilly, VA 20151

Workorder No.: H11080347 Quote ID: H646 - IFB-6402-001-002-AL

Project Name: LibbyOU4 Field MT

Energy Laboratories Inc Helena MT received the following 3 samples for CDM-Federal Programs VA on 8/19/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11080347-001	1R-45008 AL1	08/18/11 17:00	08/19/11	Soil	EPH-Ultrasonic Extraction Methanol Extraction for Volatiles EPH-Fractionation Hydrocarbons, Ext Petroleum, Aliphatics Hydrocarbons, Ext Petroleum, Aromatics Hydrocarbons, Extractable Petroleum-Scrn Volatile Petroleum Hydrocarbons Moisture
H11080347-002	1R-45009 AL1	08/18/11 17:00	08/19/11	Soil	EPH-Ultrasonic Extraction Methanol Extraction for Volatiles Hydrocarbons, Extractable Petroleum-Scrn Volatile Petroleum Hydrocarbons Moisture
H11080347-003	1R-45010 AL1	08/18/11 17:00	08/19/11	Soil	EPH-Ultrasonic Extraction Methanol Extraction for Volatiles EPH-Fractionation Hydrocarbons, Ext Petroleum, Aliphatics Hydrocarbons, Ext Petroleum, Aromatics Hydrocarbons, Extractable Petroleum-Scrn Volatile Petroleum Hydrocarbons Moisture Soil Sonication Extraction Semi-Volatile Organic Compounds, PAHs

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Sample Delivery Group: H11080347

Report Date: 09/08/11

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Lab ID: H11080347-001
Client Sample ID 1R-45008 AL1

Report Date: 09/08/11
Collection Date: 08/18/11 17:00
DateReceived: 08/19/11
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	17.0	wt%		0.2		SW3550A	08/19/11 15:19 / jaw
PETROLEUM HYDROCARBONS-VOLATILE							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.08	MA-VPH	08/23/11 15:04 / kjw
Benzene	ND	mg/kg-dry		0.060	0.04	MA-VPH	08/23/11 15:04 / kjw
Toluene	ND	mg/kg-dry		0.060	10	MA-VPH	08/23/11 15:04 / kjw
Ethylbenzene	ND	mg/kg-dry		0.060	10	MA-VPH	08/23/11 15:04 / kjw
m+p-Xylenes	ND	mg/kg-dry		0.060		MA-VPH	08/23/11 15:04 / kjw
o-Xylene	ND	mg/kg-dry		0.060		MA-VPH	08/23/11 15:04 / kjw
Xylenes, Total	ND	mg/kg-dry		0.060	30	MA-VPH	08/23/11 15:04 / kjw
Naphthalene	ND	mg/kg-dry		0.12	9	MA-VPH	08/23/11 15:04 / kjw
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	100	MA-VPH	08/23/11 15:04 / kjw
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	40	MA-VPH	08/23/11 15:04 / kjw
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	90	MA-VPH	08/23/11 15:04 / kjw
Total Purgeable Hydrocarbons	3.0	mg/kg-dry		2.4	100	MA-VPH	08/23/11 15:04 / kjw
Surr: VPH Aromatics Surrogate	95.0	%REC		70-130		MA-VPH	08/23/11 15:04 / kjw
Surr: VPH Aliphatics Surrogate	94.0	%REC		70-130		MA-VPH	08/23/11 15:04 / kjw
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN ANALYSIS							
Total Extractable Hydrocarbons	2570	mg/kg-dry	*	73	200	SW8015M	08/19/11 20:50 / jaw
Surr: o-Terphenyl	104	%REC		40-140		SW8015M	08/19/11 20:50 / jaw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	159	mg/kg-dry		73	200	MA-EPH	08/23/11 00:57 / jaw
C19 to C36 Aliphatics	594	mg/kg-dry		73	20000	MA-EPH	08/23/11 00:57 / jaw
Surr: 1-Chloro-octadecane	113	%REC		40-140		MA-EPH	08/23/11 00:57 / jaw
C11 to C22 Aromatics	639	mg/kg-dry	*	73	400	MA-EPH	08/23/11 01:39 / jaw
Total Extractable Hydrocarbons	1570	mg/kg-dry		73	2500	MA-EPH	08/23/11 01:39 / jaw
Naphthalene	ND	mg/kg-dry		1.2	9	MA-EPH	08/23/11 01:39 / jaw
2-MethylNaphthalene	ND	mg/kg-dry		1.2		MA-EPH	08/23/11 01:39 / jaw
Acenaphthylene	ND	mg/kg-dry		1.2		MA-EPH	08/23/11 01:39 / jaw
Acenaphthene	ND	mg/kg-dry		1.2	200	MA-EPH	08/23/11 01:39 / jaw
Fluorene	ND	mg/kg-dry		1.2	300	MA-EPH	08/23/11 01:39 / jaw
Phenanthrene	ND	mg/kg-dry		1.2		MA-EPH	08/23/11 01:39 / jaw
Anthracene	ND	mg/kg-dry		1.2	2000	MA-EPH	08/23/11 01:39 / jaw
Fluoranthene	ND	mg/kg-dry		1.2	300	MA-EPH	08/23/11 01:39 / jaw
Pyrene	ND	mg/kg-dry		1.2	200	MA-EPH	08/23/11 01:39 / jaw
Benzo(a)Anthracene	ND	mg/kg-dry		1.2	0.7	MA-EPH	08/23/11 01:39 / jaw
Chrysene	ND	mg/kg-dry		1.2	70	MA-EPH	08/23/11 01:39 / jaw
Benzo(b)Fluoranthene/Benzo(k)Fluoranthene	ND	mg/kg-dry		1.2	0.7	MA-EPH	08/23/11 01:39 / jaw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Lab ID: H11080347-001
Client Sample ID 1R-45008 AL1

Report Date: 09/08/11
Collection Date: 08/18/11 17:00
DateReceived: 08/19/11
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
Benzo(a)Pyrene	ND	mg/kg-dry		1.2	0.07	MA-EPH	08/23/11 01:39 / jaw
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene	ND	mg/kg-dry		1.2	0.07	MA-EPH	08/23/11 01:39 / jaw
Benzo(g,h,I)perylene	ND	mg/kg-dry		1.2		MA-EPH	08/23/11 01:39 / jaw
Surr: 2-Bromonaphthalene	68.0	%REC		40-140		MA-EPH	08/23/11 01:39 / jaw
Surr: 2-Fluorobiphenyl	84.0	%REC		40-140		MA-EPH	08/23/11 01:39 / jaw
Surr: o-Terphenyl	110	%REC		40-140		MA-EPH	08/23/11 01:39 / jaw

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Lab ID: H11080347-002
Client Sample ID 1R-45009 AL1

Report Date: 09/08/11
Collection Date: 08/18/11 17:00
DateReceived: 08/19/11
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	8.6	wt%		0.2		SW3550A	08/19/11 15:19 / jaw
PETROLEUM HYDROCARBONS-VOLATILE							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.08	MA-VPH	08/23/11 14:28 / kjw
Benzene	ND	mg/kg-dry		0.055	0.04	MA-VPH	08/23/11 14:28 / kjw
Toluene	ND	mg/kg-dry		0.055	10	MA-VPH	08/23/11 14:28 / kjw
Ethylbenzene	ND	mg/kg-dry		0.055	10	MA-VPH	08/23/11 14:28 / kjw
m+p-Xylenes	ND	mg/kg-dry		0.055		MA-VPH	08/23/11 14:28 / kjw
o-Xylene	ND	mg/kg-dry		0.055		MA-VPH	08/23/11 14:28 / kjw
Xylenes, Total	ND	mg/kg-dry		0.055	30	MA-VPH	08/23/11 14:28 / kjw
Naphthalene	ND	mg/kg-dry		0.11	9	MA-VPH	08/23/11 14:28 / kjw
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	100	MA-VPH	08/23/11 14:28 / kjw
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	40	MA-VPH	08/23/11 14:28 / kjw
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	90	MA-VPH	08/23/11 14:28 / kjw
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2	100	MA-VPH	08/23/11 14:28 / kjw
Surr: VPH Aromatics Surrogate	93.0	%REC		70-130		MA-VPH	08/23/11 14:28 / kjw
Surr: VPH Aliphatics Surrogate	93.0	%REC		70-130		MA-VPH	08/23/11 14:28 / kjw
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN ANALYSIS							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	08/19/11 17:41 / jaw
Surr: o-Terphenyl	101	%REC		40-140		SW8015M	08/19/11 17:41 / jaw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Lab ID: H11080347-003
Client Sample ID 1R-45010 AL1

Report Date: 09/08/11
Collection Date: 08/18/11 17:00
DateReceived: 08/19/11
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	5.1	wt%		0.2		SW3550A	08/19/11 15:19 / jaw
PETROLEUM HYDROCARBONS-VOLATILE							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.08	MA-VPH	08/23/11 16:11 / kjw
Benzene	ND	mg/kg-dry		0.053	0.04	MA-VPH	08/23/11 16:11 / kjw
Toluene	ND	mg/kg-dry		0.053	10	MA-VPH	08/23/11 16:11 / kjw
Ethylbenzene	ND	mg/kg-dry		0.053	10	MA-VPH	08/23/11 16:11 / kjw
m+p-Xylenes	ND	mg/kg-dry		0.053		MA-VPH	08/23/11 16:11 / kjw
o-Xylene	ND	mg/kg-dry		0.053		MA-VPH	08/23/11 16:11 / kjw
Xylenes, Total	ND	mg/kg-dry		0.053	30	MA-VPH	08/23/11 16:11 / kjw
Naphthalene	ND	mg/kg-dry		0.11	9	MA-VPH	08/23/11 16:11 / kjw
C9 to C10 Aromatics	ND	mg/kg-dry		2.1	100	MA-VPH	08/23/11 16:11 / kjw
C5 to C8 Aliphatics	ND	mg/kg-dry		2.1	40	MA-VPH	08/23/11 16:11 / kjw
C9 to C12 Aliphatics	ND	mg/kg-dry		2.1	90	MA-VPH	08/23/11 16:11 / kjw
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.1	100	MA-VPH	08/23/11 16:11 / kjw
Surr: VPH Aromatics Surrogate	94.0	%REC		70-130		MA-VPH	08/23/11 16:11 / kjw
Surr: VPH Aliphatics Surrogate	94.0	%REC		70-130		MA-VPH	08/23/11 16:11 / kjw
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN ANALYSIS							
Total Extractable Hydrocarbons	389	mg/kg-dry	*	21	200	SW8015M	08/19/11 20:02 / jaw
Surr: o-Terphenyl	101	%REC		40-140		SW8015M	08/19/11 20:02 / jaw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	ND	mg/kg-dry		21	200	MA-EPH	08/23/11 13:39 / jaw
C19 to C36 Aliphatics	34	mg/kg-dry		21	20000	MA-EPH	08/23/11 13:39 / jaw
Surr: 1-Chloro-octadecane	104	%REC		40-140		MA-EPH	08/23/11 13:39 / jaw
C11 to C22 Aromatics	139	mg/kg-dry		21	400	MA-EPH	08/23/11 14:21 / jaw
Total Extractable Hydrocarbons	222	mg/kg-dry		21	2500	MA-EPH	08/23/11 14:21 / jaw
Surr: 2-Bromonaphthalene	74.0	%REC		40-140		MA-EPH	08/23/11 14:21 / jaw
Surr: 2-Fluorobiphenyl	78.0	%REC		40-140		MA-EPH	08/23/11 14:21 / jaw
Surr: o-Terphenyl	100	%REC		40-140		MA-EPH	08/23/11 14:21 / jaw
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.							
SEMI-VOLATILE ORGANIC COMPOUNDS							
2-Methylnaphthalene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Acenaphthene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Acenaphthylene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Anthracene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Benzo(a)anthracene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Project: LibbyOU4 Field MT
Lab ID: H11080347-003
Client Sample ID 1R-45010 AL1

Report Date: 09/08/11
Collection Date: 08/18/11 17:00
DateReceived: 08/19/11
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
Benzo(a)pyrene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Benzo(b)fluoranthene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Benzo(g,h,i)perylene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Benzo(k)fluoranthene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Chrysene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Dibenzo(a,h)anthracene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Fluoranthene	0.49	mg/kg	J	0.71		SW8270C	09/07/11 03:43 / eli-b
Fluorene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Indeno(1,2,3-cd)pyrene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Naphthalene	ND	mg/kg		0.71		SW8270C	09/07/11 03:43 / eli-b
Phenanthrene	0.57	mg/kg	J	0.71		SW8270C	09/07/11 03:43 / eli-b
Pyrene	0.35	mg/kg	J	0.71		SW8270C	09/07/11 03:43 / eli-b
Surr: 2-Fluorobiphenyl	91.0	%REC		40-140		SW8270C	09/07/11 03:43 / eli-b
Surr: o-Terphenyl	121	%REC		40-140		SW8270C	09/07/11 03:43 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 13458
Sample ID: MB-13458-13437	Method Blank				Run: HHP_110822A				08/22/11 17:16
C11 to C22 Aromatics	ND	mg/kg-dry	10						
Total Extractable Hydrocarbons	ND	mg/kg-dry	10						
Naphthalene	ND	mg/kg-dry	0.17						
2-MethylNaphthalene	ND	mg/kg-dry	0.17						
Acenaphthylene	ND	mg/kg-dry	0.17						
Acenaphthene	ND	mg/kg-dry	0.17						
Fluorene	ND	mg/kg-dry	0.17						
Phenanthrene	ND	mg/kg-dry	0.17						
Anthracene	ND	mg/kg-dry	0.17						
Fluoranthene	ND	mg/kg-dry	0.17						
Pyrene	ND	mg/kg-dry	0.17						
Benzo(a)Anthracene	ND	mg/kg-dry	0.17						
Chrysene	ND	mg/kg-dry	0.17						
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	ND	mg/kg-dry	0.17						
Benzo(a)Pyrene	ND	mg/kg-dry	0.17						
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	0.298	mg/kg-dry	0.17						
Benzo(g,h,I)perylene	ND	mg/kg-dry	0.17						
Surr: 2-Bromonaphthalene			0.17	71	40	140			
Surr: 2-Fluorobiphenyl			0.17	79	40	140			
Surr: o-Terphenyl			0.17	90	40	140			
Sample ID: LCS-13458-13437	Laboratory Control Sample				Run: HHP_110822A				08/22/11 18:40
Naphthalene	3.90	mg/kg-dry	0.17	59	40	140			
2-MethylNaphthalene	4.08	mg/kg-dry	0.17	61	40	140			
Acenaphthylene	5.85	mg/kg-dry	0.17	88	40	140			
Acenaphthene	6.00	mg/kg-dry	0.17	90	40	140			
Fluorene	5.20	mg/kg-dry	0.17	78	40	140			
Phenanthrene	6.49	mg/kg-dry	0.17	97	40	140			
Anthracene	5.60	mg/kg-dry	0.17	84	40	140			
Fluoranthene	7.17	mg/kg-dry	0.17	108	40	140			
Pyrene	6.95	mg/kg-dry	0.17	104	40	140			
Benzo(a)Anthracene	6.01	mg/kg-dry	0.17	90	40	140			
Chrysene	6.13	mg/kg-dry	0.17	92	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	14.8	mg/kg-dry	0.17	112	40	140			
Benzo(a)Pyrene	7.22	mg/kg-dry	0.17	108	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	15.0	mg/kg-dry	0.17	111	40	140			
Benzo(g,h,I)perylene	7.44	mg/kg-dry	0.17	109	40	140			
Surr: 2-Bromonaphthalene			0.17	65	40	140			
Surr: 2-Fluorobiphenyl			0.17	84	40	140			
Surr: o-Terphenyl			0.17	103	40	140			
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: HHP_110822A				08/22/11 22:51
Naphthalene	4.93	mg/kg-dry	0.18	67	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 13458
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: HHP_110822A				08/22/11 22:51
2-MethylNaphthalene	4.75	mg/kg-dry	0.18	65	40	140			
Acenaphthylene	6.43	mg/kg-dry	0.18	88	40	140			
Acenaphthene	6.33	mg/kg-dry	0.18	87	40	140			
Fluorene	5.62	mg/kg-dry	0.18	77	40	140			
Phenanthrene	6.75	mg/kg-dry	0.18	93	40	140			
Anthracene	5.88	mg/kg-dry	0.18	81	40	140			
Fluoranthene	7.61	mg/kg-dry	0.18	104	40	140			
Pyrene	7.36	mg/kg-dry	0.18	101	40	140			
Benzo(a)Anthracene	6.41	mg/kg-dry	0.18	88	40	140			
Chrysene	6.53	mg/kg-dry	0.18	89	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	15.8	mg/kg-dry	0.18	109	40	140			
Benzo(a)Pyrene	7.74	mg/kg-dry	0.18	106	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	15.9	mg/kg-dry	0.18	110	40	140			
Benzo(g,h,I)perylene	7.88	mg/kg-dry	0.18	108	40	140			
Surr: 2-Bromonaphthalene			0.18	65	40	140			
Surr: 2-Fluorobiphenyl			0.18	78	40	140			
Surr: o-Terphenyl			0.18	97	40	140			
Sample ID: H11080347-002AMSD	Sample Matrix Spike Duplicate				Run: HHP_110822A				08/23/11 00:15
Naphthalene	4.82	mg/kg-dry	0.18	66	40	140	2.3	40	
2-MethylNaphthalene	4.89	mg/kg-dry	0.18	67	40	140	2.8	20	
Acenaphthylene	6.54	mg/kg-dry	0.18	90	40	140	1.6	20	
Acenaphthene	6.46	mg/kg-dry	0.18	88	40	140	2.0	20	
Fluorene	5.71	mg/kg-dry	0.18	78	40	140	1.6	20	
Phenanthrene	6.92	mg/kg-dry	0.18	95	40	140	2.4	20	
Anthracene	6.02	mg/kg-dry	0.18	82	40	140	2.4	20	
Fluoranthene	7.80	mg/kg-dry	0.18	107	40	140	2.5	20	
Pyrene	7.55	mg/kg-dry	0.18	103	40	140	2.5	20	
Benzo(a)Anthracene	6.60	mg/kg-dry	0.18	90	40	140	3.0	20	
Chrysene	6.67	mg/kg-dry	0.18	91	40	140	2.2	20	
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	16.2	mg/kg-dry	0.18	112	40	140	2.6	20	
Benzo(a)Pyrene	7.96	mg/kg-dry	0.18	109	40	140	2.8	20	
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	16.3	mg/kg-dry	0.18	113	40	140	2.7	20	
Benzo(g,h,I)perylene	8.08	mg/kg-dry	0.18	111	40	140	2.5	20	
Surr: 2-Bromonaphthalene			0.18	69	40	140			
Surr: 2-Fluorobiphenyl			0.18	82	40	140			
Surr: o-Terphenyl			0.18	100	40	140			
Sample ID: MB-13458-13437	Method Blank				Run: HHP_110822A				08/22/11 16:34
C9 to C18 Aliphatics	ND	mg/kg-dry	10						
C19 to C36 Aliphatics	ND	mg/kg-dry	10						
Surr: 1-Chloro-octadecane			0.17	95	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 13458
Sample ID: LCS-13458-13437	Laboratory Control Sample				Run: HHP_110822A				08/22/11 17:58
n-Decane	2.58	mg/kg-dry	0.17	39	40	140			S
n-Dodecane	3.75	mg/kg-dry	0.17	56	40	140			
n-Tetradecane	4.74	mg/kg-dry	0.17	71	40	140			
n-Hexadecane	5.57	mg/kg-dry	0.17	84	40	140			
n-Octadecane	6.24	mg/kg-dry	0.17	94	40	140			
n-Eicosane	6.68	mg/kg-dry	0.17	100	40	140			
n-Docosane	6.83	mg/kg-dry	0.17	102	40	140			
n-Tetracosane	6.85	mg/kg-dry	0.17	103	40	140			
n-Hexacosane	6.92	mg/kg-dry	0.17	104	40	140			
n-Octacosane	6.90	mg/kg-dry	0.17	103	40	140			
Surr: 1-Chloro-octadecane			0.17	105	40	140			
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: HHP_110822A				08/22/11 22:09
n-Decane	4.12	mg/kg-dry	0.18	56	40	140			
n-Dodecane	5.12	mg/kg-dry	0.18	70	40	140			
n-Tetradecane	5.82	mg/kg-dry	0.18	80	40	140			
n-Hexadecane	6.31	mg/kg-dry	0.18	86	40	140			
n-Octadecane	6.98	mg/kg-dry	0.18	96	40	140			
n-Eicosane	7.51	mg/kg-dry	0.18	103	40	140			
n-Docosane	7.74	mg/kg-dry	0.18	106	40	140			
n-Tetracosane	7.78	mg/kg-dry	0.18	107	40	140			
n-Hexacosane	7.86	mg/kg-dry	0.18	108	40	140			
n-Octacosane	7.83	mg/kg-dry	0.18	107	40	140			
Surr: 1-Chloro-octadecane			0.18	107	40	140			
Sample ID: H11080347-002AMSD	Sample Matrix Spike Duplicate				Run: HHP_110822A				08/22/11 23:33
n-Decane	3.55	mg/kg-dry	0.18	49	40	140	15	40	
n-Dodecane	4.68	mg/kg-dry	0.18	64	40	140	8.9	40	
n-Tetradecane	5.58	mg/kg-dry	0.18	76	40	140	4.3	30	
n-Hexadecane	6.26	mg/kg-dry	0.18	86	40	140	0.9	20	
n-Octadecane	7.06	mg/kg-dry	0.18	97	40	140	1.0	20	
n-Eicosane	7.56	mg/kg-dry	0.18	104	40	140	0.7	20	
n-Docosane	7.78	mg/kg-dry	0.18	107	40	140	0.5	20	
n-Tetracosane	7.82	mg/kg-dry	0.18	107	40	140	0.6	20	
n-Hexacosane	7.90	mg/kg-dry	0.18	108	40	140	0.5	20	
n-Octacosane	7.87	mg/kg-dry	0.18	108	40	140	0.5	20	
Surr: 1-Chloro-octadecane			0.18	108	40	140			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Analytical Run: R73746
Sample ID: CCV_0822GC104r-S	Continuing Calibration Verification Standard								08/22/11 15:36
Naphthalene	6.41	mg/kg-dry	0.17	96	75	125			
2-MethylNaphthalene	6.37	mg/kg-dry	0.17	96	75	125			
Acenaphthylene	6.43	mg/kg-dry	0.17	96	75	125			
Acenaphthene	6.40	mg/kg-dry	0.17	96	75	125			
Fluorene	6.55	mg/kg-dry	0.17	98	75	125			
Phenanthrene	6.45	mg/kg-dry	0.17	97	75	125			
Anthracene	5.99	mg/kg-dry	0.17	90	75	125			
Fluoranthene	6.43	mg/kg-dry	0.17	96	75	125			
Pyrene	6.43	mg/kg-dry	0.17	97	75	125			
Benzo(a)Anthracene	6.45	mg/kg-dry	0.17	97	75	125			
Chrysene	6.44	mg/kg-dry	0.17	97	75	125			
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	12.6	mg/kg-dry	0.17	94	75	125			
Benzo(a)Pyrene	5.98	mg/kg-dry	0.17	90	75	125			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	11.7	mg/kg-dry	0.17	88	75	125			
Benzo(g,h,I)perylene	5.85	mg/kg-dry	0.17	88	75	125			
Surr: 2-Bromonaphthalene			0.17	89	40	140			
Surr: 2-Fluorobiphenyl			0.17	92	40	140			
Surr: o-Terphenyl			0.17	91	40	140			
Sample ID: CCV_0822GC103r-S	Continuing Calibration Verification Standard								08/22/11 14:54
n-Nonane	6.61	mg/kg-dry	0.17	99	75	125			
n-Decane	6.63	mg/kg-dry	0.17	99	75	125			
n-Dodecane	6.73	mg/kg-dry	0.17	101	75	125			
n-Tetradecane	6.85	mg/kg-dry	0.17	103	75	125			
n-Hexadecane	6.74	mg/kg-dry	0.17	101	75	125			
n-Octadecane	6.72	mg/kg-dry	0.17	101	75	125			
n-Nonadecane	6.80	mg/kg-dry	0.17	102	75	125			
n-Eicosane	6.76	mg/kg-dry	0.17	101	75	125			
n-Docosane	6.78	mg/kg-dry	0.17	102	75	125			
n-Tetracosane	6.71	mg/kg-dry	0.17	101	75	125			
n-Hexacosane	6.78	mg/kg-dry	0.17	102	75	125			
n-Octacosane	6.78	mg/kg-dry	0.17	102	75	125			
n-Triacontane	6.75	mg/kg-dry	0.17	101	75	125			
n-Hexatriacontane	7.30	mg/kg-dry	0.17	109	75	125			
Surr: 1-Chloro-octadecane			0.17	97	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Analytical Run: R73778
Sample ID: CCV_0823GC106r-S	Continuing Calibration Verification Standard								08/23/11 12:57
Naphthalene	6.39	mg/kg-dry	0.17	96	75	125			
2-MethylNaphthalene	6.35	mg/kg-dry	0.17	95	75	125			
Acenaphthylene	6.41	mg/kg-dry	0.17	96	75	125			
Acenaphthene	6.41	mg/kg-dry	0.17	96	75	125			
Fluorene	6.59	mg/kg-dry	0.17	99	75	125			
Phenanthrene	6.44	mg/kg-dry	0.17	97	75	125			
Anthracene	5.98	mg/kg-dry	0.17	90	75	125			
Fluoranthene	6.42	mg/kg-dry	0.17	96	75	125			
Pyrene	6.43	mg/kg-dry	0.17	96	75	125			
Benzo(a)Anthracene	6.50	mg/kg-dry	0.17	98	75	125			
Chrysene	6.48	mg/kg-dry	0.17	97	75	125			
Benzo(b)Fluoranthene/Benzo(k)Fluoranth	13.1	mg/kg-dry	0.17	98	75	125			
Benzo(a)Pyrene	6.31	mg/kg-dry	0.17	95	75	125			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)p	12.8	mg/kg-dry	0.17	96	75	125			
Benzo(g,h,I)perylene	6.41	mg/kg-dry	0.17	96	75	125			
Surr: 2-Bromonaphthalene			0.17	89	40	140			
Surr: 2-Fluorobiphenyl			0.17	92	40	140			
Surr: o-Terphenyl			0.17	91	40	140			
Sample ID: CCV_0823GC105r-S	Continuing Calibration Verification Standard								08/23/11 12:15
n-Nonane	6.77	mg/kg-dry	0.17	101	75	125			
n-Decane	6.76	mg/kg-dry	0.17	101	75	125			
n-Dodecane	6.82	mg/kg-dry	0.17	102	75	125			
n-Tetradecane	6.93	mg/kg-dry	0.17	104	75	125			
n-Hexadecane	6.83	mg/kg-dry	0.17	102	75	125			
n-Octadecane	6.81	mg/kg-dry	0.17	102	75	125			
n-Nonadecane	6.90	mg/kg-dry	0.17	103	75	125			
n-Eicosane	6.85	mg/kg-dry	0.17	103	75	125			
n-Docosane	6.89	mg/kg-dry	0.17	103	75	125			
n-Tetracosane	6.81	mg/kg-dry	0.17	102	75	125			
n-Hexacosane	6.88	mg/kg-dry	0.17	103	75	125			
n-Octacosane	6.89	mg/kg-dry	0.17	103	75	125			
n-Triacontane	6.86	mg/kg-dry	0.17	103	75	125			
n-Hexatriacontane	7.35	mg/kg-dry	0.17	110	75	125			
Surr: 1-Chloro-octadecane			0.17	98	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-VPH									Batch: 13455
Sample ID: LCS-13455	Laboratory Control Sample				Run: VARIAN1_110823A				08/23/11 11:31
2-Methylpentane	2.18	mg/kg-dry	0.10	87	70	130			
n-Butylcyclohexane	2.69	mg/kg-dry		108	70	130			
n-Decane	2.37	mg/kg-dry		95	70	130			
n-Pentane	1.71	mg/kg-dry	0.10	68	30	130			
Methyl tert-butyl ether (MTBE)	2.07	mg/kg-dry	0.10	83	70	130			
Benzene	2.25	mg/kg-dry	0.050	90	70	130			
Toluene	2.37	mg/kg-dry	0.050	95	70	130			
Ethylbenzene	2.32	mg/kg-dry	0.050	93	70	130			
m+p-Xylenes	4.83	mg/kg-dry	0.050	97	70	130			
o-Xylene	2.34	mg/kg-dry	0.050	93	70	130			
Naphthalene	2.20	mg/kg-dry	0.10	88	70	130			
Total Purgeable Hydrocarbons	35.6	mg/kg-dry	2.0	95	70	130			
Surr: VPH Aromatics Surrogate			0.050	98	70	130			
Surr: VPH Aliphatics Surrogate			0.050	100	70	130			
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: VARIAN1_110823A				08/23/11 12:12
Methyl tert-butyl ether (MTBE)	2.22	mg/kg-dry	0.11	81	70	130			
Benzene	2.41	mg/kg-dry	0.055	88	70	130			
Toluene	2.54	mg/kg-dry	0.055	93	70	130			
Ethylbenzene	2.50	mg/kg-dry	0.055	92	70	130			
m+p-Xylenes	5.22	mg/kg-dry	0.055	96	70	130			
o-Xylene	2.53	mg/kg-dry	0.055	92	70	130			
Naphthalene	2.31	mg/kg-dry	0.11	85	70	130			
Total Purgeable Hydrocarbons	37.2	mg/kg-dry	2.2	91	70	130			
Surr: VPH Aromatics Surrogate			0.055	96	70	130			
Surr: VPH Aliphatics Surrogate			0.055	94	70	130			
Sample ID: H11080347-002AMSD	Sample Matrix Spike Duplicate				Run: VARIAN1_110823A				08/23/11 12:45
Methyl tert-butyl ether (MTBE)	2.26	mg/kg-dry	0.11	83	70	130	1.9	20	
Benzene	2.38	mg/kg-dry	0.055	87	70	130	1.1	20	
Toluene	2.54	mg/kg-dry	0.055	93	70	130	0.1	20	
Ethylbenzene	2.48	mg/kg-dry	0.055	91	70	130	1.0	20	
m+p-Xylenes	5.14	mg/kg-dry	0.055	94	70	130	1.6	20	
o-Xylene	2.50	mg/kg-dry	0.055	92	70	130	1.0	20	
Naphthalene	2.44	mg/kg-dry	0.11	89	70	130	5.2	20	
Total Purgeable Hydrocarbons	37.1	mg/kg-dry	2.2	91	70	130	0.3	20	
Surr: VPH Aromatics Surrogate			0.055	96	70	130			
Surr: VPH Aliphatics Surrogate			0.055	95	70	130			
Sample ID: MB-13455	Method Blank				Run: VARIAN1_110823A				08/23/11 13:52
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry	0.10						
Benzene	ND	mg/kg-dry	0.050						
Toluene	ND	mg/kg-dry	0.050						
Ethylbenzene	ND	mg/kg-dry	0.050						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-VPH									Batch: 13455
Sample ID: MB-13455	Method Blank				Run: VARIAN1_110823A				08/23/11 13:52
m+p-Xylenes	ND	mg/kg-dry	0.050						
o-Xylene	ND	mg/kg-dry	0.050						
Naphthalene	ND	mg/kg-dry	0.10						
C9 to C10 Aromatics	ND	mg/kg-dry	2.0						
C5 to C8 Aliphatics	ND	mg/kg-dry	2.0						
C9 to C12 Aliphatics	ND	mg/kg-dry	2.0						
Total Purgeable Hydrocarbons	ND	mg/kg-dry	2.0						
Xylenes, Total	ND	mg/kg-dry	0.050						
Surr: VPH Aromatics Surrogate			0.050	88	70	130			
Surr: VPH Aliphatics Surrogate			0.050	91	70	130			
Method: MA-VPH									Analytical Run: R73791
Sample ID: CCV_0823GC203r-S	Continuing Calibration Verification Standard								08/23/11 10:48
1,2,4-Trimethylbenzene	2.27	mg/kg-dry	0.10	91	75	125			
2,2,4-Trimethylpentane	2.76	mg/kg-dry	0.10	110	75	125			
2-Methylpentane	2.43	mg/kg-dry	0.10	97	75	125			
n-Butylcyclohexane	2.89	mg/kg-dry		116	75	125			
n-Decane	2.31	mg/kg-dry		92	75	125			
n-Pentane	2.18	mg/kg-dry	0.10	87	75	125			
Methyl tert-butyl ether (MTBE)	2.03	mg/kg-dry	0.10	81	75	125			
Benzene	2.16	mg/kg-dry	0.050	86	75	125			
Toluene	2.24	mg/kg-dry	0.050	90	75	125			
Ethylbenzene	2.24	mg/kg-dry	0.050	89	75	125			
m+p-Xylenes	4.60	mg/kg-dry	0.050	92	75	125			
o-Xylene	2.23	mg/kg-dry	0.050	89	75	125			
Naphthalene	2.16	mg/kg-dry	0.10	86	75	125			
Surr: VPH Aromatics Surrogate			0.050	92	75	125			
Surr: VPH Aliphatics Surrogate			0.050	100	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Batch: 13437
Sample ID: MB-13437	Method Blank				Run: HHP_110819A				08/19/11 16:06
Total Extractable Hydrocarbons	ND	mg/kg-dry	10						
Surr: o-Terphenyl			0.17	97	40	140			
Sample ID: LCS-13437	Laboratory Control Sample				Run: HHP_110819A				08/19/11 16:53
Total Extractable Hydrocarbons	191	mg/kg-dry	10	93	60	140			
Surr: o-Terphenyl			0.17	102	40	140			
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: HHP_110819A				08/19/11 18:28
Total Extractable Hydrocarbons	222	mg/kg-dry	11	99	60	140			
Surr: o-Terphenyl			0.18	103	40	140			
Sample ID: H11080347-002AMSD	Sample Matrix Spike Duplicate				Run: HHP_110819A				08/19/11 19:15
Total Extractable Hydrocarbons	216	mg/kg-dry	11	96	60	140	3.0	20	
Surr: o-Terphenyl			0.18	101	40	140			
Method: SW8015M									Analytical Run: R73710
Sample ID: CCV_0819GC102r-S	Continuing Calibration Verification Standard								08/19/11 10:26
n-Nonane	6.35	mg/kg-dry		95	75	125			
n-Decane	6.42	mg/kg-dry		96	75	125			
n-Dodecane	6.40	mg/kg-dry		96	75	125			
n-Tetradecane	6.57	mg/kg-dry		99	75	125			
n-Hexadecane	6.44	mg/kg-dry		97	75	125			
n-Octadecane	6.43	mg/kg-dry		96	75	125			
n-Nonadecane	6.50	mg/kg-dry		97	75	125			
n-Eicosane	6.49	mg/kg-dry		97	75	125			
n-Docosane	6.46	mg/kg-dry		97	75	125			
n-Tetracosane	6.45	mg/kg-dry		97	75	125			
n-Hexacosane	6.50	mg/kg-dry		98	75	125			
n-Octacosane	6.54	mg/kg-dry		98	75	125			
n-Triacontane	6.57	mg/kg-dry		99	75	125			
n-Hexatriacontane	6.67	mg/kg-dry		100	75	125			
Surr: o-Terphenyl			0.17	92	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8270C									Batch: B_56829
Sample ID: H11080347-002AMSD	Sample Matrix Spike				Run: SUB-B172078				09/07/11 03:12
2-Methylnaphthalene	4.82	mg/kg	0.37	66	40	140	4.1	40	
Acenaphthene	5.45	mg/kg	0.37	75	40	140	0.3	40	
Acenaphthylene	5.51	mg/kg	0.37	75	40	140	1.6	40	
Anthracene	6.80	mg/kg	0.37	93	40	140	6.8	40	
Benzo(a)anthracene	8.18	mg/kg	0.37	112	40	140	15	40	
Benzo(a)pyrene	7.88	mg/kg	0.37	108	40	140	3.8	40	
Benzo(b)fluoranthene	8.47	mg/kg	0.37	116	40	140	11	40	
Benzo(g,h,i)perylene	6.34	mg/kg	0.37	87	40	140	1.0	40	
Benzo(k)fluoranthene	7.06	mg/kg	0.37	97	40	140	13	40	
Chrysene	7.52	mg/kg	0.37	103	40	140	11	40	
Dibenzo(a,h)anthracene	7.30	mg/kg	0.37	100	40	140	2.8	40	
Fluoranthene	7.37	mg/kg	0.37	101	40	140	3.2	40	
Fluorene	6.23	mg/kg	0.37	85	40	140	3.3	40	
Indeno(1,2,3-cd)pyrene	8.76	mg/kg	0.37	120	40	140	1.7	40	
Naphthalene	4.63	mg/kg	0.37	63	40	140	3.6	40	
Phenanthrene	6.61	mg/kg	0.37	91	40	140	0.0	40	
Pyrene	6.66	mg/kg	0.37	91	40	140	1.1	40	
Surr: 2-Fluorobiphenyl			0.37	90	40	140	0.0	40	
Surr: o-Terphenyl			0.37	105	40	140	0.0	40	
Sample ID: H11080347-002AMS	Sample Matrix Spike				Run: SUB-B172078				09/07/11 02:41
2-Methylnaphthalene	5.03	mg/kg	0.37	69	40	140	0.0	40	
Acenaphthene	5.47	mg/kg	0.37	75	40	140	0.0	40	
Acenaphthylene	5.42	mg/kg	0.37	74	40	140	0.0	40	
Anthracene	6.35	mg/kg	0.37	87	40	140	0.0	40	
Benzo(a)anthracene	9.49	mg/kg	0.37	130	40	140	0.0	40	
Benzo(a)pyrene	7.59	mg/kg	0.37	104	40	140	0.0	40	
Benzo(b)fluoranthene	7.59	mg/kg	0.37	104	40	140	0.0	40	
Benzo(g,h,i)perylene	6.40	mg/kg	0.37	88	40	140	0.0	40	
Benzo(k)fluoranthene	8.03	mg/kg	0.37	110	40	140	0.0	40	
Chrysene	6.72	mg/kg	0.37	92	40	140	0.0	40	
Dibenzo(a,h)anthracene	7.09	mg/kg	0.37	97	40	140	0.0	40	
Fluoranthene	7.14	mg/kg	0.37	98	40	140	0.0	40	
Fluorene	6.03	mg/kg	0.37	83	40	140	0.0	40	
Indeno(1,2,3-cd)pyrene	8.61	mg/kg	0.37	118	40	140	0.0	40	
Naphthalene	4.80	mg/kg	0.37	66	40	140	0.0	40	
Phenanthrene	6.61	mg/kg	0.37	91	40	140	0.0	40	
Pyrene	6.74	mg/kg	0.37	92	40	140	0.0	40	
Surr: 2-Fluorobiphenyl			0.37	87	40	140	0.0	40	
Surr: o-Terphenyl			0.37	112	40	140	0.0	40	
Sample ID: LCS-56829	Laboratory Control Sample				Run: SUB-B172078				09/07/11 01:39
2-Methylnaphthalene	4.43	mg/kg	0.33	66	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: CDM-Federal Programs VA
Report Date: 09/08/11
Project: LibbyOU4 Field MT
Work Order: H11080347

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8270C									Batch: B_56829
Sample ID: LCS-56829	Laboratory Control Sample				Run: SUB-B172078				09/07/11 01:39
Acenaphthene	5.46	mg/kg	0.33	82	40	140			
Acenaphthylene	5.29	mg/kg	0.33	79	40	140			
Anthracene	6.40	mg/kg	0.33	96	40	140			
Benzo(a)anthracene	8.00	mg/kg	0.33	120	40	140			
Benzo(a)pyrene	7.27	mg/kg	0.33	109	40	140			
Benzo(b)fluoranthene	7.47	mg/kg	0.33	112	40	140			
Benzo(g,h,i)perylene	5.90	mg/kg	0.33	88	40	140			
Benzo(k)fluoranthene	5.82	mg/kg	0.33	87	40	140			
Chrysene	7.73	mg/kg	0.33	116	40	140			
Dibenzo(a,h)anthracene	6.87	mg/kg	0.33	103	40	140			
Fluoranthene	7.00	mg/kg	0.33	105	40	140			
Fluorene	6.19	mg/kg	0.33	93	40	140			
Indeno(1,2,3-cd)pyrene	7.67	mg/kg	0.33	115	40	140			
Naphthalene	3.93	mg/kg	0.33	59	40	140			
Phenanthrene	6.73	mg/kg	0.33	101	40	140			
Pyrene	6.41	mg/kg	0.33	96	40	140			
Surr: 2-Fluorobiphenyl			0.33	99	40	140			
Surr: o-Terphenyl			0.33	118	40	140			
Sample ID: MB-56829-13458-13437	Method Blank				Run: SUB-B172078				09/07/11 01:08
2-Methylnaphthalene	ND	mg/kg	0.33						
Acenaphthene	ND	mg/kg	0.33						
Acenaphthylene	ND	mg/kg	0.33						
Anthracene	ND	mg/kg	0.33						
Benzo(a)anthracene	ND	mg/kg	0.33						
Benzo(a)pyrene	ND	mg/kg	0.33						
Benzo(b)fluoranthene	ND	mg/kg	0.33						
Benzo(g,h,i)perylene	ND	mg/kg	0.33						
Benzo(k)fluoranthene	ND	mg/kg	0.33						
Chrysene	ND	mg/kg	0.33						
Dibenzo(a,h)anthracene	ND	mg/kg	0.33						
Fluoranthene	ND	mg/kg	0.33						
Fluorene	ND	mg/kg	0.33						
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.33						
Naphthalene	ND	mg/kg	0.33						
Phenanthrene	ND	mg/kg	0.33						
Pyrene	ND	mg/kg	0.33						
Surr: 2-Fluorobiphenyl			0.33	85	40	140			
Surr: o-Terphenyl			0.33	103	40	140			

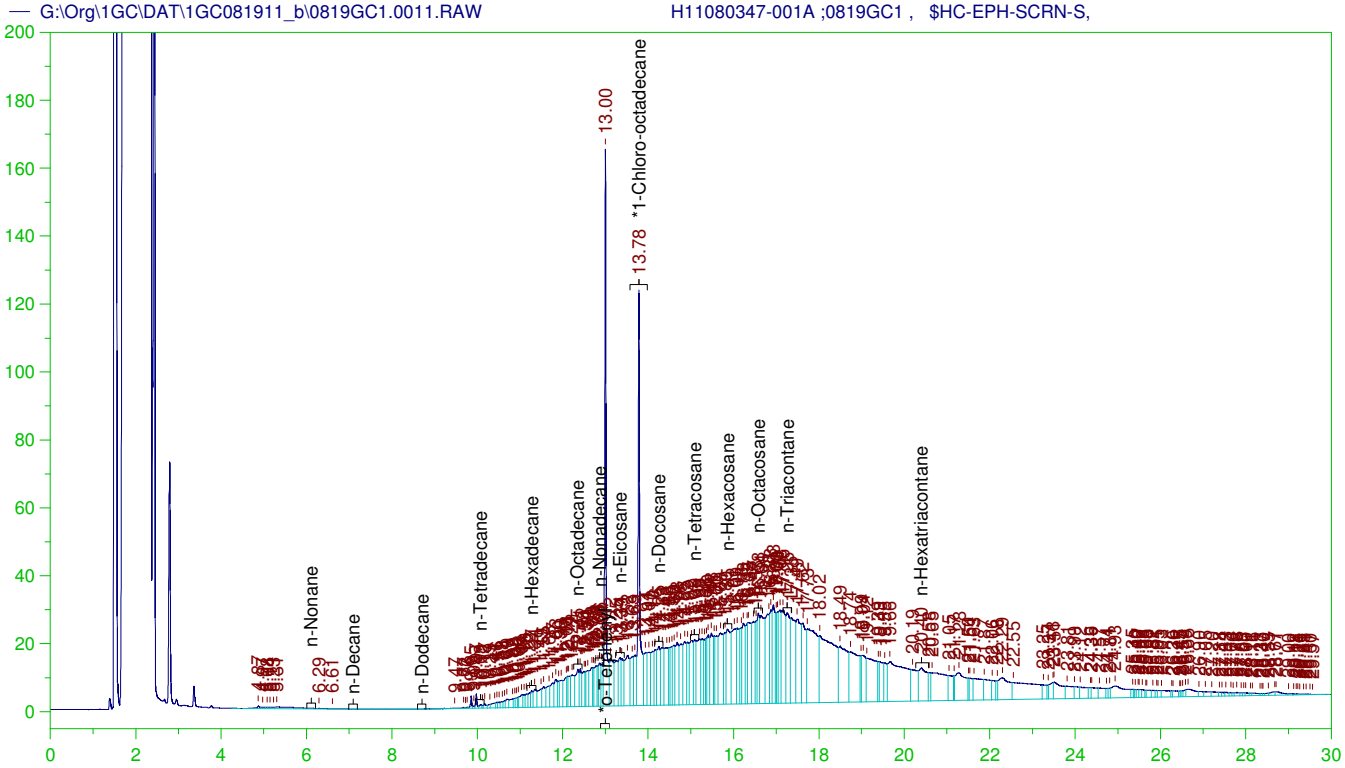
Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

1R-45008 AL1 Batch ID: 13437

G:\Org\1GC\DAT\1GC081911_b\0819GC1.0011.RAW H11080347-001A ;0819GC1 , $HC-EPH-SCRN-S,



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: H11080347-001A ;0819GC1 , $HC-EPH-SCRN-S,
Raw File: G:\Org\1GC\DAT\1GC081911_b\0819GC1.0011.RAW
Date & Time Acquired: 8/19/2011 8:50:24 PM
Method File: G:\Org\1GC\Methods\2011Methods\08191111.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\SC081911.CAL
Sample Weight: 4.1 Dilution: 2 S.A.: 1

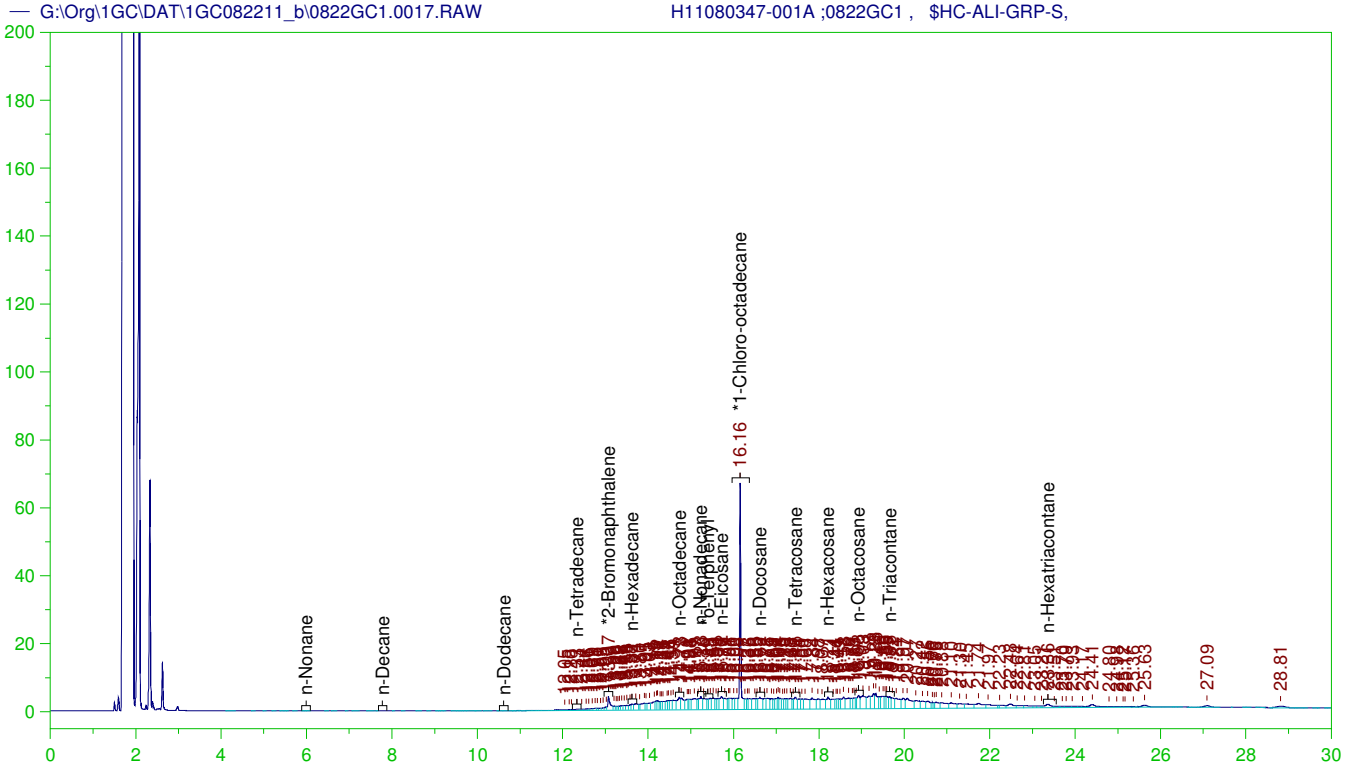
Mean RF for C9 to C18 Hydrocarbons: 1991.4
Mean RF for C19 to C36 Hydrocarbons: 2011.273
Mean RF for Total Extractable Hydrocarbons: 2001.336
Rt range for Diesel Range Organics: 6.99 to 17.36
Rt range for C9 to C18 Hydrocarbons: 6.01 to 12.89
Rt range for C19 to C36 Hydrocarbons: 12.94 to 20.57

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.997	48.78	71.138	145.83	-
*1-Chloro-octadecane	13.782	48.78	85.427	175.12	-

DRO Area:6107867 DRO Amount: 1488.729
TEH Area:1.056133E+07 TEH Amount: 2574.213
C9-C18 Area:1011852 C9-C18 Amount: 247.8591
C19-C36 Area:7747220 C19-C36 Amount: 1878.975

1R-45008 AL1 Batch ID: 13458

G:\Org\1GC\DAT\1GC082211_b\0822GC1.0017.RAW H11080347-001A ;0822GC1 , $HC-ALI-GRP-S,



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: H11080347-001A ;0822GC1 , $HC-ALI-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082211_b\0822GC1.0017.RAW
Date & Time Acquired: 8/23/2011 12:57:27 AM
Method File: G:\Org\1GC\Methods\2011Methods\08221117.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\AL082211.CAL
Sample Weight: 4.1 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 927.6339
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 938.9972
Mean RF for Total Extractable Hydrocarbons: 934.1273
Rt range for Diesel Range Organics: 7.68 to 19.04
Rt range for C9 to C18 Aliphatic Hydrocarbons: 5.89 to 15.15
Rt range for C19 to C36 Aliphatic Hydrocarbons: 15.2 to 23.56

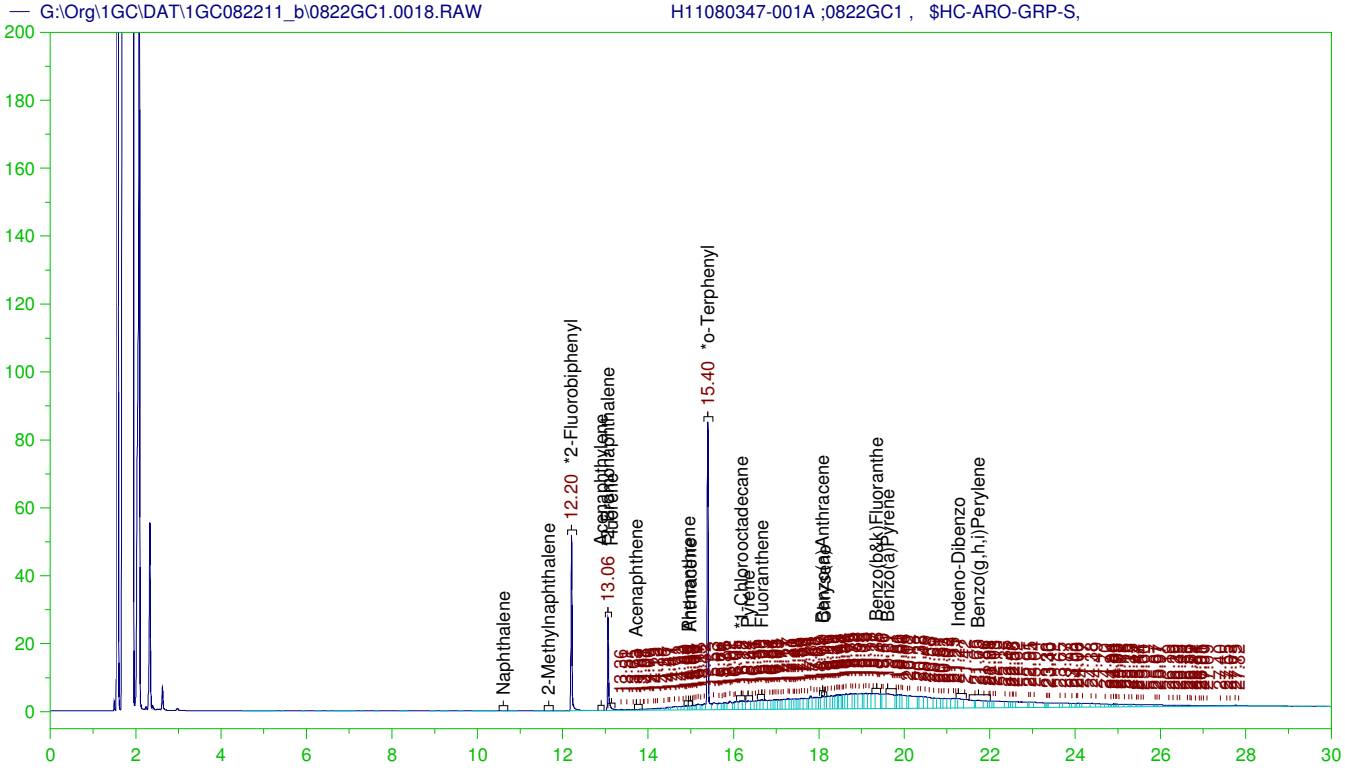
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	16.157	48.78	69.343	142.15	-

DRO Area:990003.3 DRO Amount: 516.9836
TEH Area:1505000 TEH Amount: 785.9167

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:302272.4 C9-C18 Amount: 158.9527
C19-C36 Area:1142473 C19-C36 Amount: 593.5099

1R-45008 AL1 Batch ID: 13458

G:\Org\1GC\DAT\1GC082211_b\0822GC1.0018.RAW H11080347-001A ;0822GC1 , $HC-ARO-GRP-S,



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: H11080347-001A ;0822GC1 , $HC-ARO-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082211_b\0822GC1.0018.RAW
Date & Time Acquired: 8/23/2011 1:39:23 AM
Method File: G:\Org\1GC\Methods\2011Methods\08221118.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\AR082211.CAL
Sample Weight: 4.1 Dilution: 2 S.A.: 1

Mean RF EPH Aromatics: 987.6566
Rt range for EPH C11 to C22 Aromatics: 10.51 to 22.02

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	12.204	48.78	41.207	84.47	-
*2-Bromonaphthalene	13.061	48.78	33.845	69.38	-
*o-Terphenyl	15.395	48.78	59.286	121.54	-
*1-Chlorooctadecane	16.183	48.78	6.921	14.19	-

C11-C22 Aromatics Area:1294231 C11-C22 Aromatics Amount: 639.2225
EPH Aromatics total Area:1577894 EPH Aromatics Total Amount: 779.324

1R-45008 AL1 Batch ID: 13458

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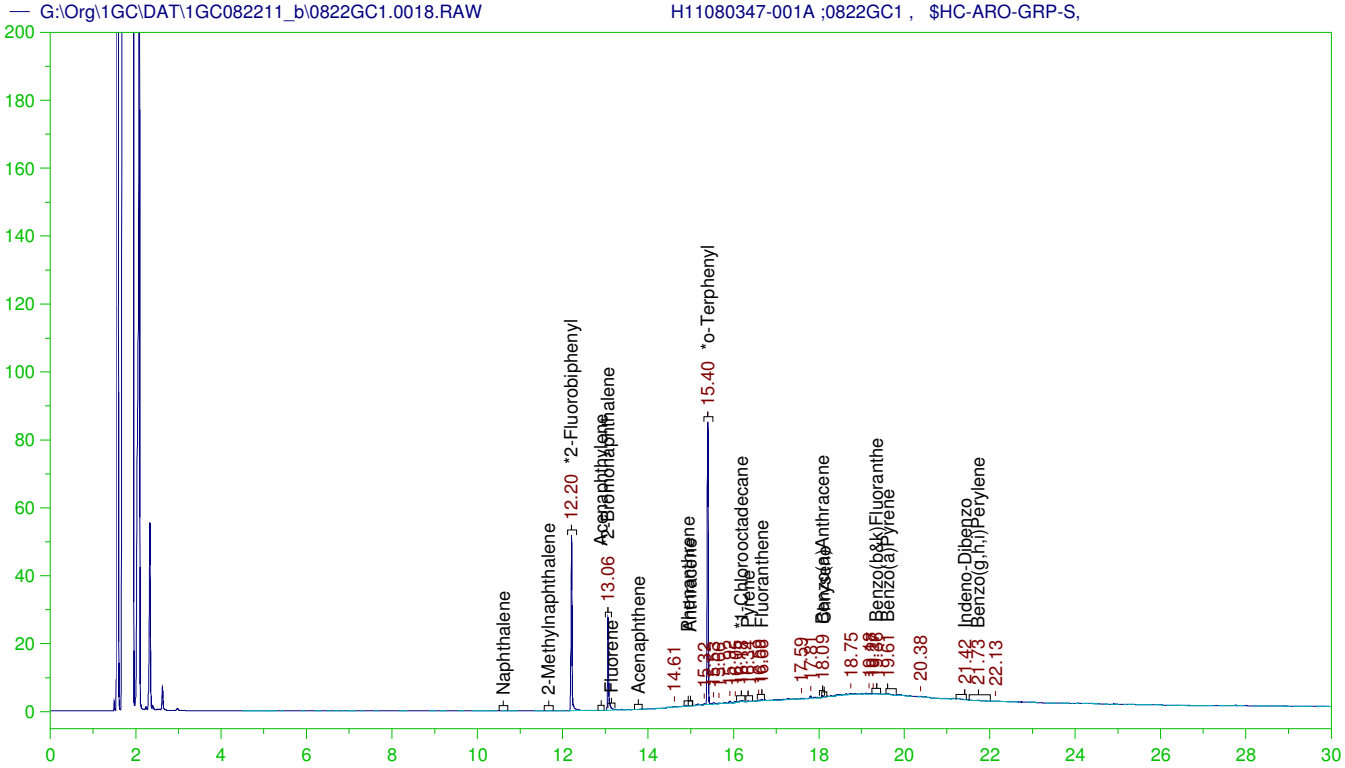

EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

Sample Name: H11080347-001A ;0822GC1 , $HC-ARO-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082211_b\0822GC1.0018.RAW
Date & Time Acquired: 8/23/2011 1:39:23 AM
Method File: G:\Org\1GC\Methods\2011Methods\rTSBAVEK%.met
Calibration File: G:\Org\1GC\Cals\2011CALS\AR082211.CAL
Sample Weight: 4.1 Dilution: 2 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	.	.	.		.732	U
2-Methylnaphthalene	.	.	.		.732	U
Acenaphthylene	.	.	.		.732	U
Fluorene	.	.	.		.732	U
Acenaphthene	.	.	.		.732	U
Phenanthrene	.	.	.		.732	U
Anthracene	.	.	.		.732	U
Pyrene	16.341	16.341	16.341	746	.732	U
Fluoranthene	16.659	16.659	16.659	585	.732	U
Benzo(a)Anthracene	18.087	18.087	18.087	1051	.732	U
Chrysene	.	.	.		.732	U
Benzo(b&k)Fluoranthe	19.355	19.355	19.355	740	1.463	U
Benzo(a)Pyrene	19.61	19.61	19.61	1207	.732	U
Indeno-Dibenzo	21.419	21.419	21.419	600	1.463	U
Benzo(g,h,i)Perylene	21.731	21.731	21.731	585	.732	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	12.204	48.78	40.956	83.96	40-140
*2-Bromonaphthalene	13.061	48.78	33.098	67.85	40-140
*o-Terphenyl	15.395	48.78	53.818	110.33	40-140
*1-Chlorooctadecane	16.183	48.78	.341	.7	40-140

1R-45009 AL1 Batch ID: 13437

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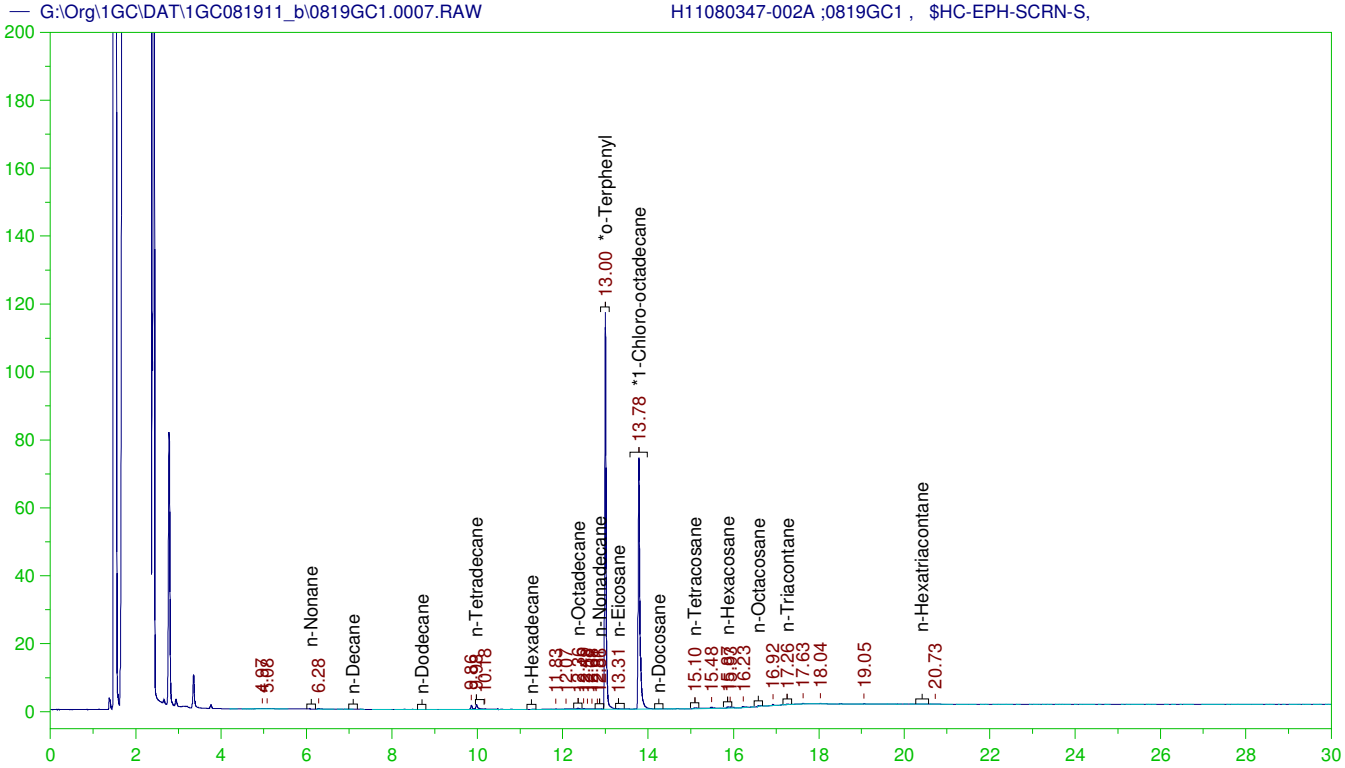

EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: H11080347-002A ;0819GC1 , $HC-EPH-SCRN-S,
Raw File: G:\Org\1GC\DAT\1GC081911_b\0819GC1.0007.RAW
Date & Time Acquired: 8/19/2011 5:41:09 PM
Method File: G:\Org\1GC\Methods\2011Methods\SR081911.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\SC081911.CAL
Sample Weight: 27.4 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 1991.4
Mean RF for C19 to C36 Hydrocarbons: 2011.273
Mean RF for Total Extractable Hydrocarbons: 2001.336
Rt range for Diesel Range Organics: 6.99 to 17.36
Rt range for C9 to C18 Hydrocarbons: 6.01 to 12.89
Rt range for C19 to C36 Hydrocarbons: 12.94 to 20.57

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.996	7.299	7.374	101.02	-
*1-Chloro-octadecane	13.781	7.299	7.547	103.4	-

DRO Area:31451.3 DRO Amount: 1.147091
TEH Area:40236.92 TEH Amount: 1.46752
C9-C18 Area:20668.95 C9-C18 Amount: 0.7575988
C19-C36 Area:14953.67 C19-C36 Amount: 0.5426956

1R-45010 AL1 Batch ID: 13437

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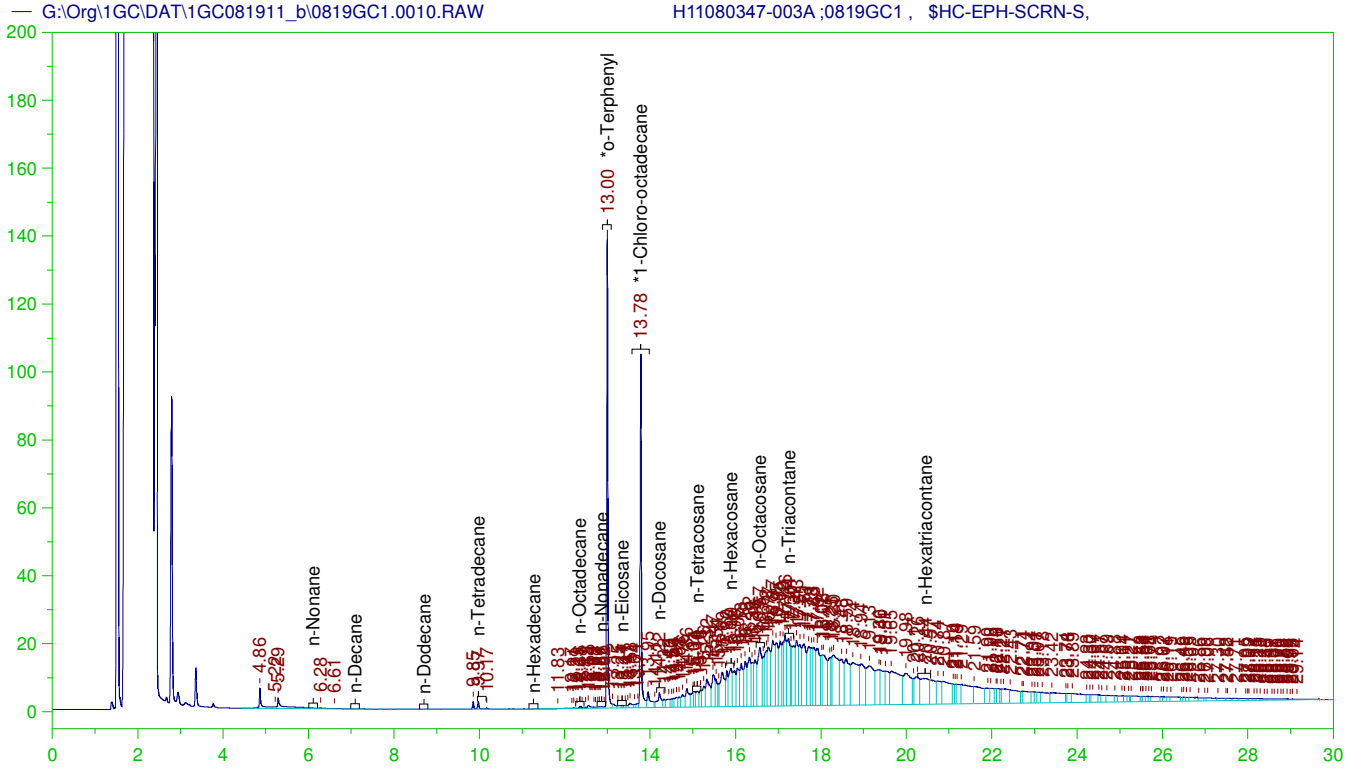

EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: H11080347-003A ;0819GC1 , $HC-EPH-SCRN-S,

Raw File: G:\Org\1GC\DAT\1GC081911_b\0819GC1.0010.RAW
Date & Time Acquired: 8/19/2011 8:02:56 PM
Method File: G:\Org\1GC\Methods\2011Methods\08191110.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\SC081911.CAL
Sample Weight: 14.2 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 1991.4
Mean RF for C19 to C36 Hydrocarbons: 2011.273
Mean RF for Total Extractable Hydrocarbons: 2001.336
Rt range for Diesel Range Organics: 6.99 to 17.36
Rt range for C9 to C18 Hydrocarbons: 6.01 to 12.89
Rt range for C19 to C36 Hydrocarbons: 12.94 to 20.57

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.995	14.085	14.663	104.1	-
*1-Chloro-octadecane	13.78	14.085	15.417	109.46	-

DRO Area:1905042 DRO Amount: 134.0683
TEH Area:5525873 TEH Amount: 388.8862
C9-C18 Area:34910.76 C9-C18 Amount: 2.469121
C19-C36 Area:4264064 C19-C36 Amount: 298.6032

1R-45010 AL1 Batch ID: 13458

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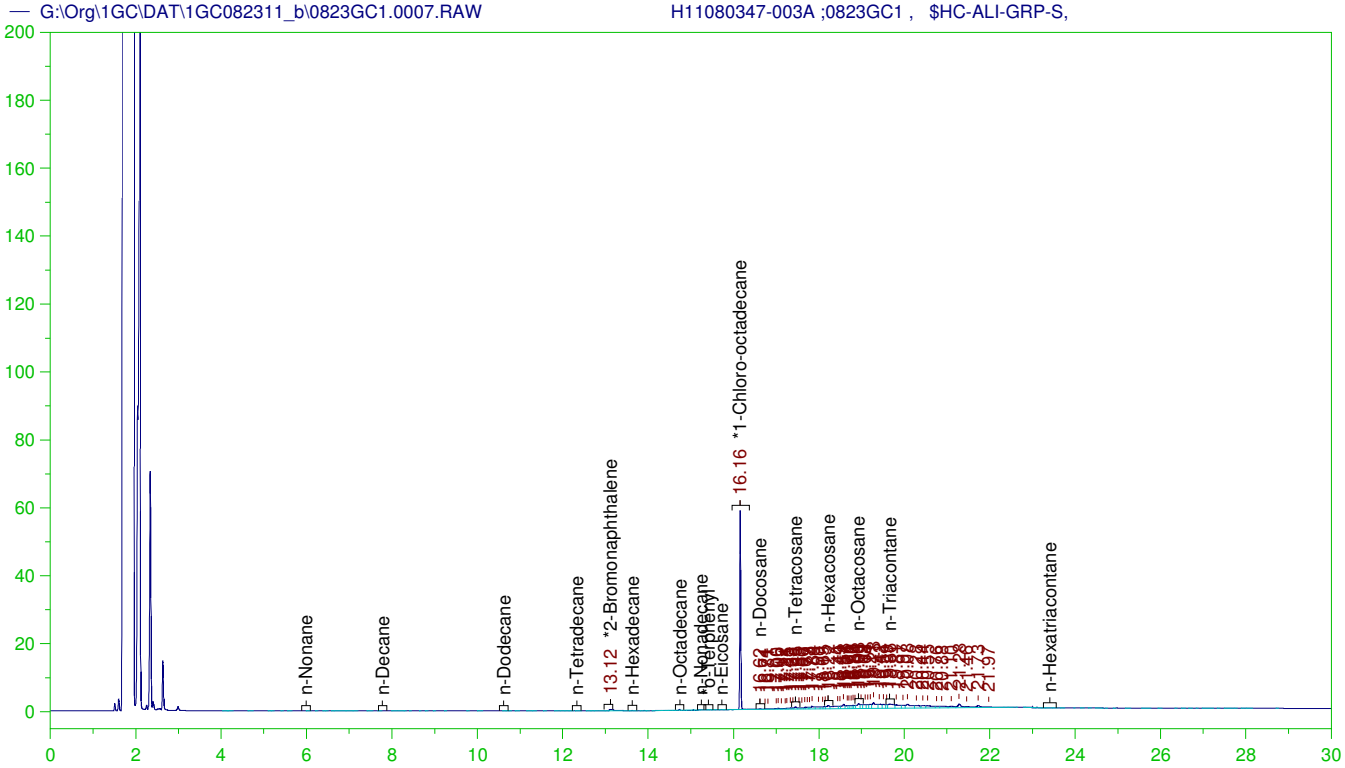

EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: H11080347-003A ;0823GC1 , $HC-ALI-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082311_b\0823GC1.0007.RAW
Date & Time Acquired: 8/23/2011 1:39:18 PM
Method File: G:\Org\1GC\Methods\2011Methods\08231107.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\AL082211.CAL
Sample Weight: 14.2 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 927.6339
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 938.9972
Mean RF for Total Extractable Hydrocarbons: 934.1273
Rt range for Diesel Range Organics: 7.68 to 19.04
Rt range for C9 to C18 Aliphatic Hydrocarbons: 5.89 to 15.15
Rt range for C19 to C36 Aliphatic Hydrocarbons: 15.2 to 23.56

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	16.158	14.085	14.773	104.89	-

DRO Area:93878.31 DRO Amount: 14.15471
TEH Area:231345.2 TEH Amount: 34.88158

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:4292.25 C9-C18 Amount: 0.6517035
C19-C36 Area:226424.3 C19-C36 Amount: 33.96256

1R-45010 AL1 Batch ID: 13458

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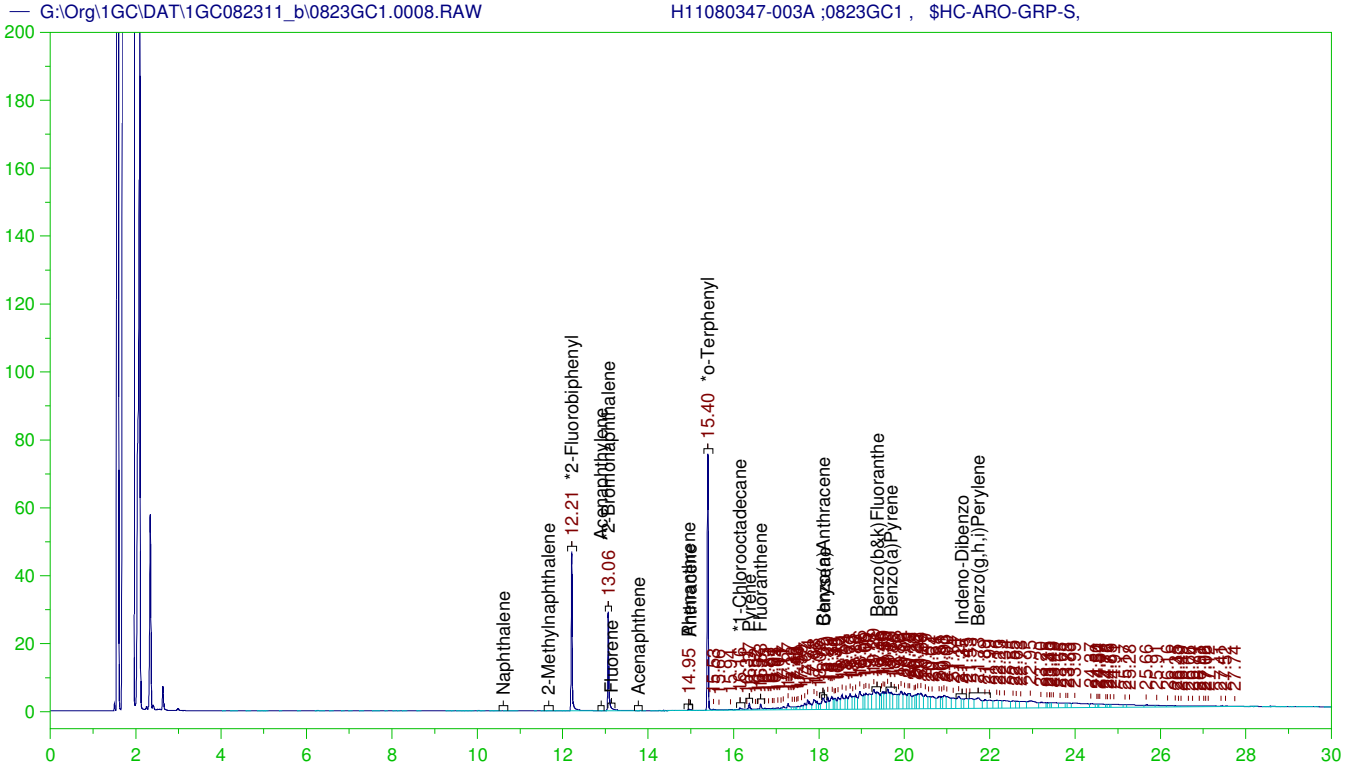

EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: H11080347-003A ;0823GC1 , $HC-ARO-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082311_b\0823GC1.0008.RAW
Date & Time Acquired: 8/23/2011 2:21:20 PM
Method File: G:\Org\1GC\Methods\2011Methods\08231108.MET
Calibration File: G:\Org\1GC\Cals\2011CALS\AR082211.CAL
Sample Weight: 14.2 Dilution: 2 S.A.: 1

Mean RF EPH Aromatics: 987.6566
Rt range for EPH C11 to C22 Aromatics: 10.51 to 22.02

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	12.208	14.085	10.978	77.95	-
*2-Bromonaphthalene	13.064	14.085	10.586	75.16	-
*o-Terphenyl	15.397	14.085	14.084	100.	-
*1-Chlorooctadecane	16.157	14.085	.468	3.32	-

C11-C22 Aromatics Area:971411.9 C11-C22 Aromatics Amount: 138.5285
EPH Aromatics total Area:1312187 EPH Aromatics Total Amount: 187.1249

1R-45010 AL1 Batch ID: 13458

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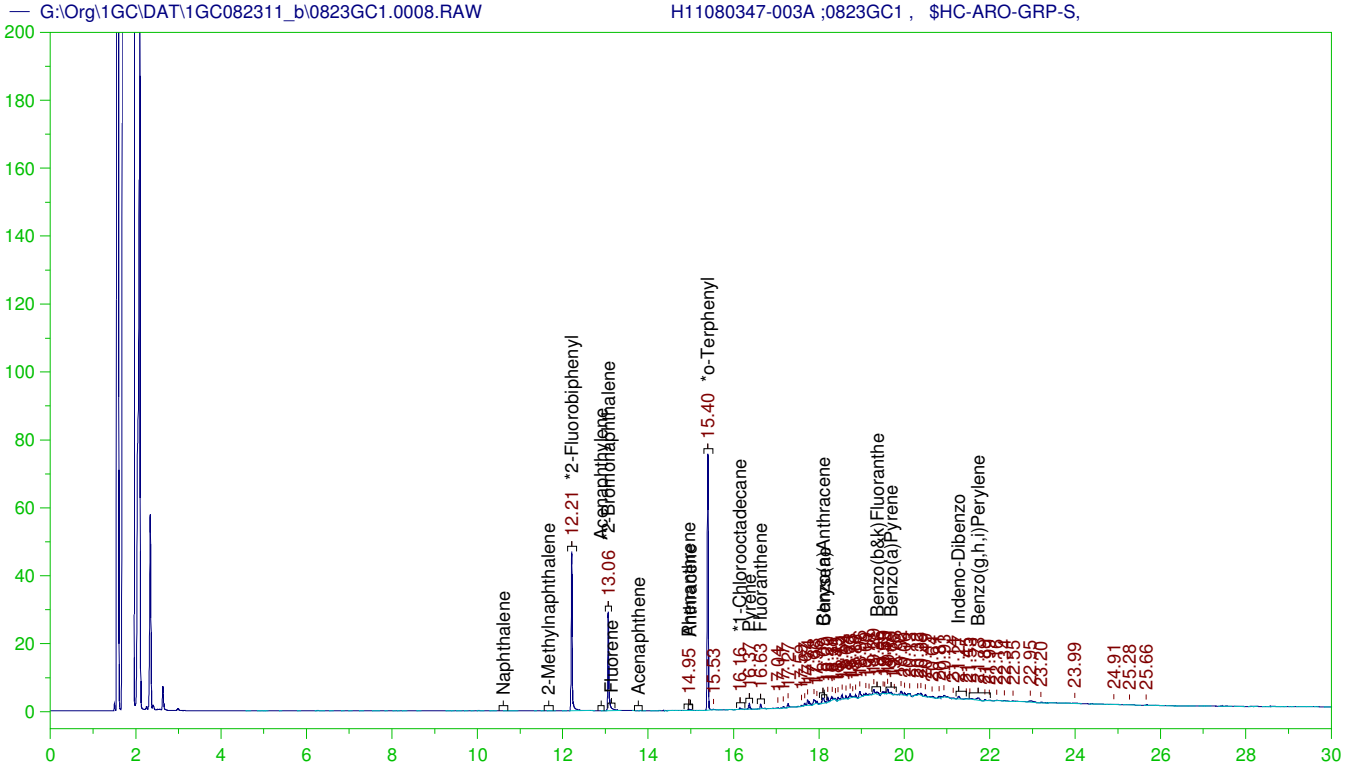

EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

Sample Name: H11080347-003A ;0823GC1 , $HC-ARO-GRP-S,
Raw File: G:\Org\1GC\DAT\1GC082311_b\0823GC1.0008.RAW
Date & Time Acquired: 8/23/2011 2:21:20 PM
Method File: G:\Org\1GC\Methods\2011Methods\rTSBAVEK%.met
Calibration File: G:\Org\1GC\Cals\2011CALS\AR082211.CAL
Sample Weight: 14.2 Dilution: 2 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	.	.	.		.211	U
2-Methylnaphthalene	.	.	.		.211	U
Acenaphthylene	.	.	.		.211	U
Fluorene	.	.	.		.211	U
Acenaphthene	.	.	.		.211	U
Phenanthrene	14.953	14.953	14.953	1040	.211	U
Anthracene	.	.	.		.211	U
Pyrene	16.365	-3.3	-3.301	3327	.466	
Fluoranthene	16.633	-3.57	-3.569	2474	.345	
Benzo(a)Anthracene	18.094	-5.	-5.03	5403	.765	
Chrysene	.	.	.		.211	U
Benzo(b&k)Fluoranthe	19.364	19.364	19.364	1512	.423	U
Benzo(a)Pyrene	19.691	19.691	19.691	734	.211	U
Indeno-Dibenzo	21.273	21.273	21.273	2536	.423	U
Benzo(g,h,i)Perylene	21.725	-8.7	-8.661	3741	.523	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	12.208	14.085	10.919	77.52	40-140
*2-Bromonaphthalene	13.064	14.085	10.444	74.15	40-140
*o-Terphenyl	15.397	14.085	14.022	99.56	40-140
*1-Chlorooctadecane	16.157	14.085	.185	1.31	40-140

1R-45008 AL1 Batch ID: 13455

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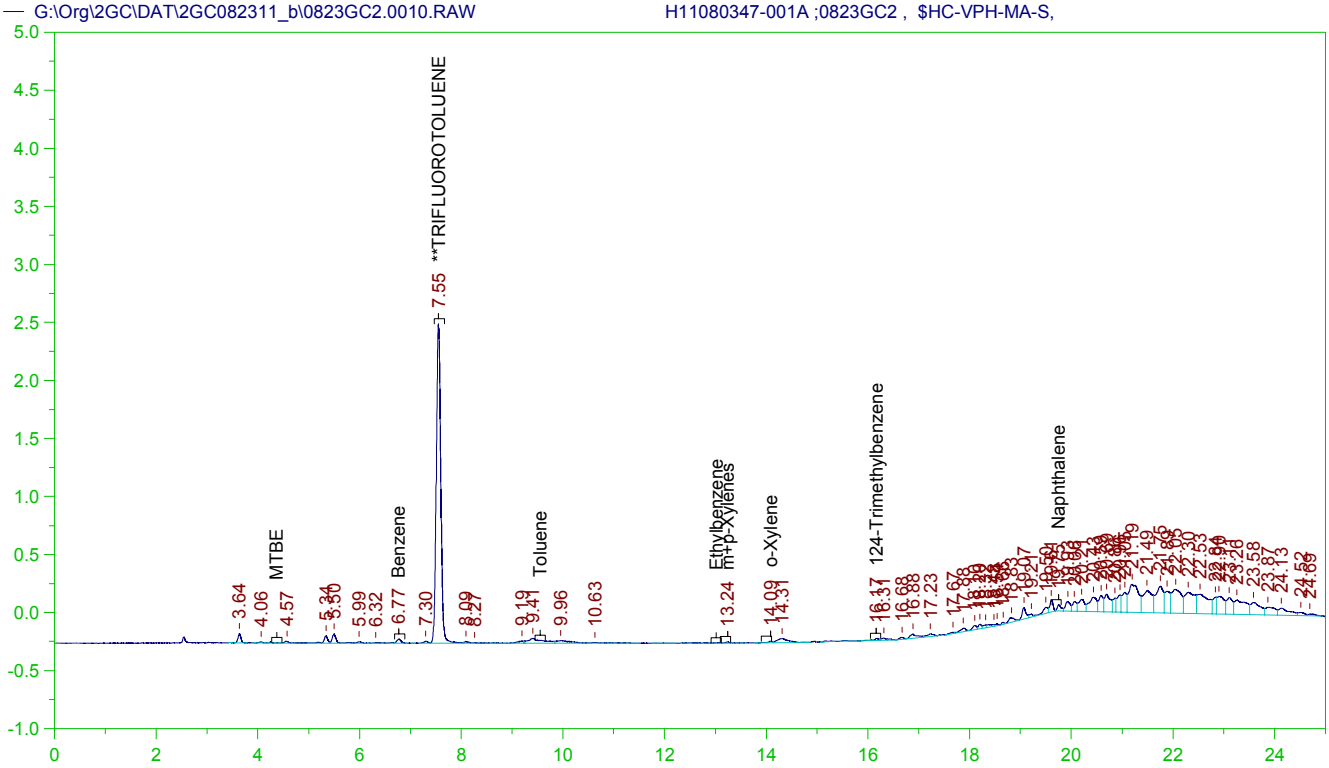

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H11080347-001A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2.0010.RAW
Date & Time Acquired: 8/23/2011 3:04:12 PM
Method File: G:\Org\2GC\Methods\08231110$nap.met
Calibration File: G:\Org\2GC\Cals\Vhn070811.cal
Sample Weight: 50 Dilution: 1.21 S.A.: 1.21

Mean RF for C9 to C10 Aromatic Hydrocarbons: 459.1725
Rt range for C9 to C10 Aromatics: 14.1 to 19.6
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:4073.56 C9-C10 Aromatics Amount: 0.2146909

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.121	U
Benzene	6.773	6.773	6.773	213	.061	U
Toluene	.	.	.		.061	U
Ethylbenzene	.	.	.		.061	U
m+p-Xylenes	13.244	13.244	13.244	80	.121	U
o-Xylene	14.087	14.087	14.087	70	.061	U
124-Trimethylbenzene	16.169	16.169	16.169	115	.061	U
Naphthalene	19.754	19.754	19.754	295	.121	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	7.553	3.025	2.864	94.67	70-130

1R-45008 AL1 Batch ID: 13455

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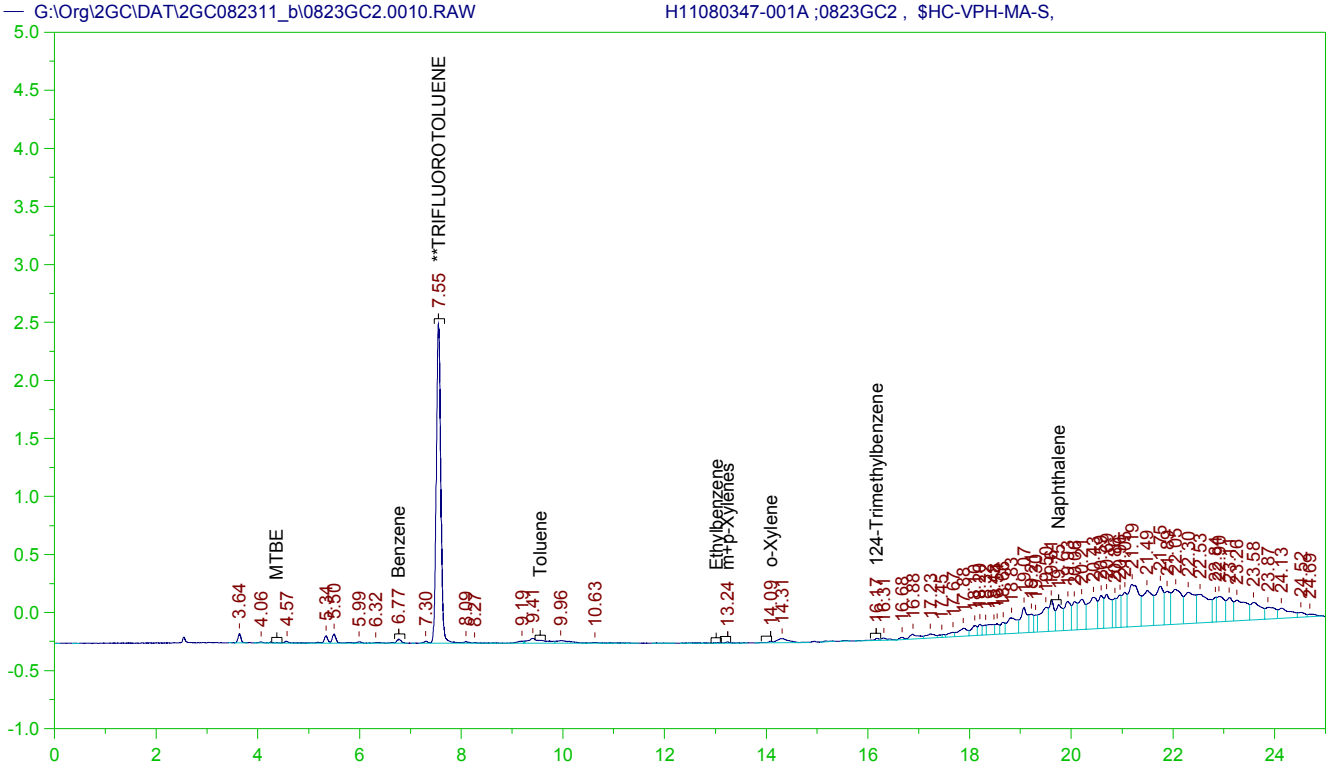

VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H11080347-001A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2.0010.RAW
Date & Time Acquired: 8/23/2011 3:04:12 PM
Method File: G:\Org\2GC\Methods\08231110.met
Calibration File: G:\Org\2GC\Cals\Vhn070811.cal
Sample Weight: 50 Dilution: 1.21 S.A.: 1.21

Mean RF for C9 to C10 Aromatic Hydrocarbons: 459.1725
Rt range for C9 to C10 Aromatics: 14.1 to 19.6
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:14306.2 C9-C10 Aromatics Amount: 0.753987

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.121	U
Benzene	6.773	6.773	6.773	213	.061	U
Toluene	.	.	.		.061	U
Ethylbenzene	.	.	.		.061	U
m+p-Xylenes	13.244	13.244	13.244	80	.121	U
o-Xylene	14.087	14.087	14.087	70	.061	U
124-Trimethylbenzene	16.169	16.169	16.169	115	.061	U
Naphthalene	19.754	-12.13	-12.201	1897	.102	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	7.553	3.025	2.864	94.67	70-130

1R-45008 AL1 Batch ID: 13455

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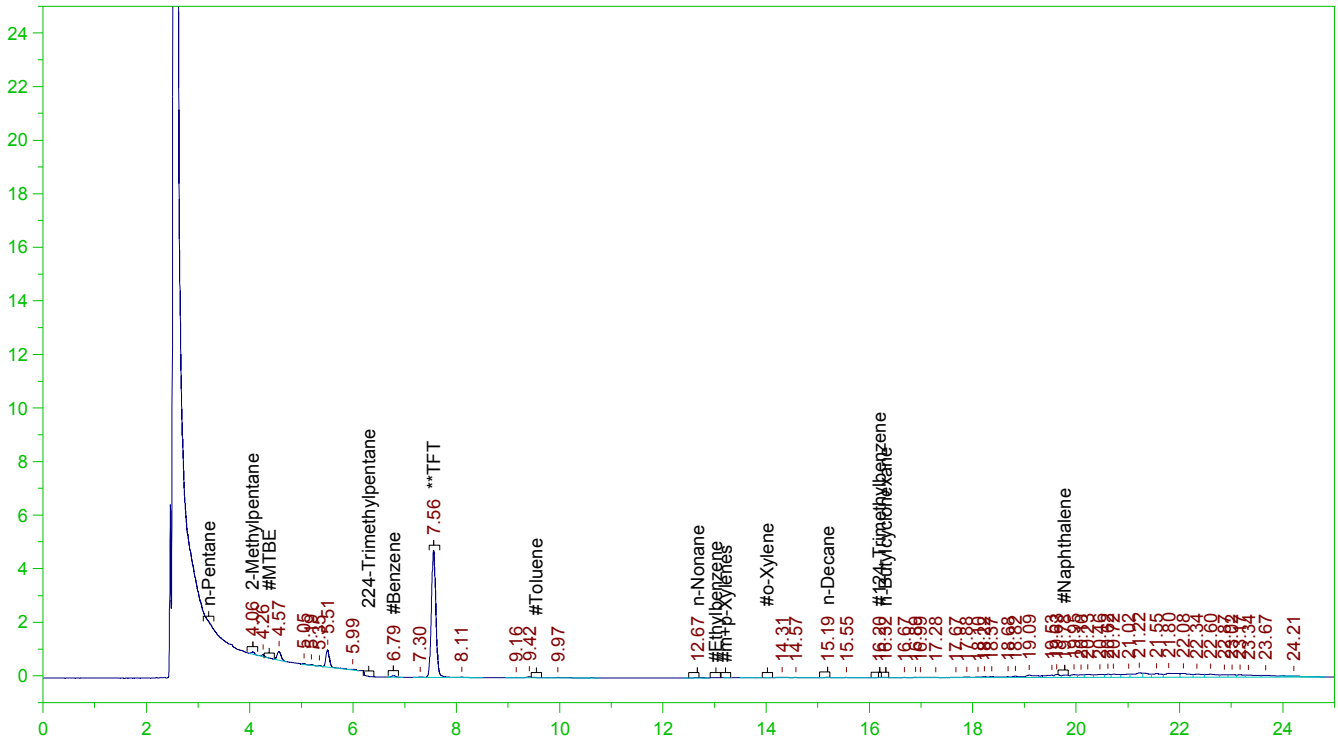

VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H11080347-001A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2B.0010.RAW
Date & Time Acquired: 8/23/2011 3:04:12 PM
Method File: G:\Org\2GC\Methods\lavar070811SBNB.MET
Calibration File: G:\Org\2GC\Cals\Vhn070811b.cal
Sample Weight: 50 Dilution: 1.21 S.A.: 1.21

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 284.0118
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 214.3126
Mean RF for all calibrated compounds: 324.5251
Rt range for Gasoline Range Organics: 3.96 to 15.23
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.11 to 12.5
Rt range for C9 to C12 Aliphatic Hydrocarbons: 12.55 to 19.65

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	7.56	3.025	2.84	93.89	-

GRO Area:8730.922 GRO Amount: 0.6510693
TPH Area:40352.09 TPH Amount: 3.009076

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:7761.07 C5-C8 Amount: 0.6613032
C9-C12 Area:7353.166 C9-C12 Amount: 0.8303135

1R-45009 AL1 Batch ID: 13455

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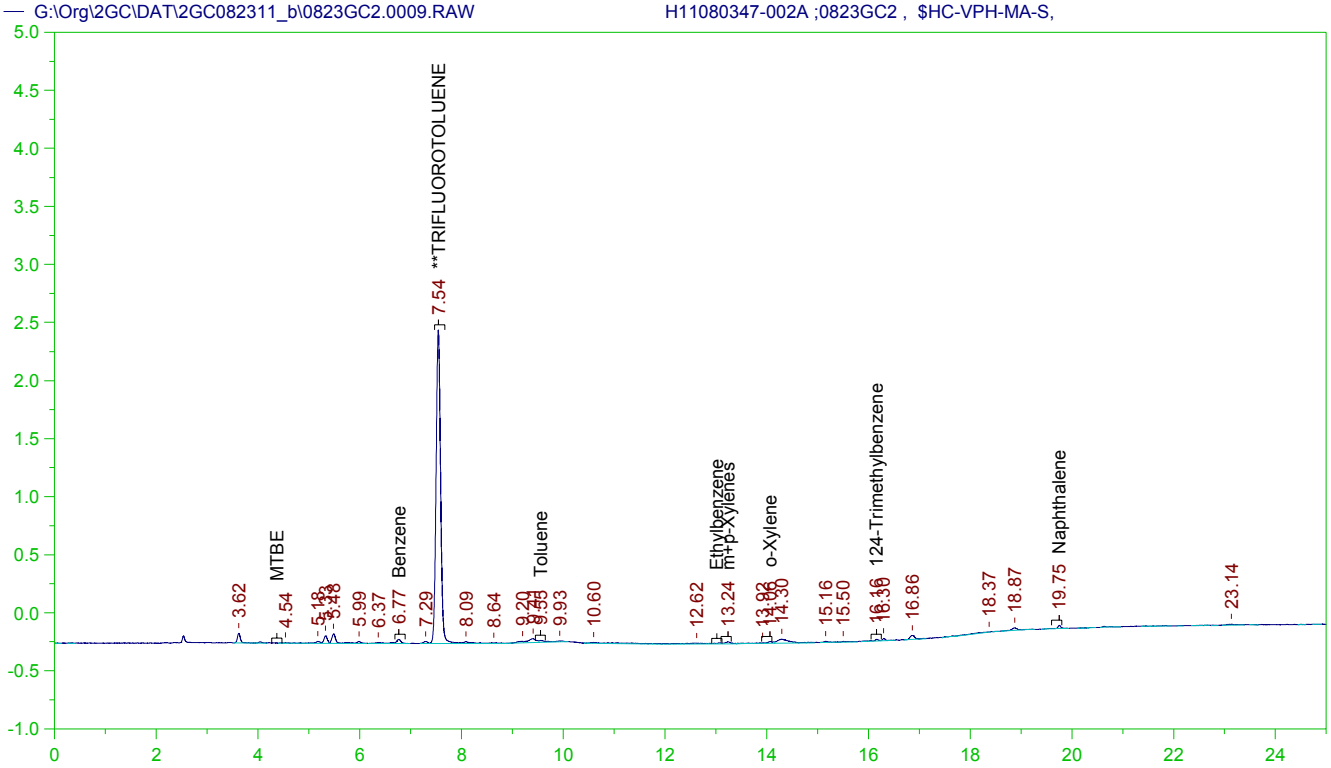


VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT
Sample Name: H11080347-002A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2.0009.RAW
Date & Time Acquired: 8/23/2011 2:28:25 PM
Method File: G:\Org\2GC\Methods\lavar070811.met
Calibration File: G:\Org\2GC\Cals\Vhn070811.cal
Sample Weight: 50 Dilution: 1.09 S.A.: 1.09

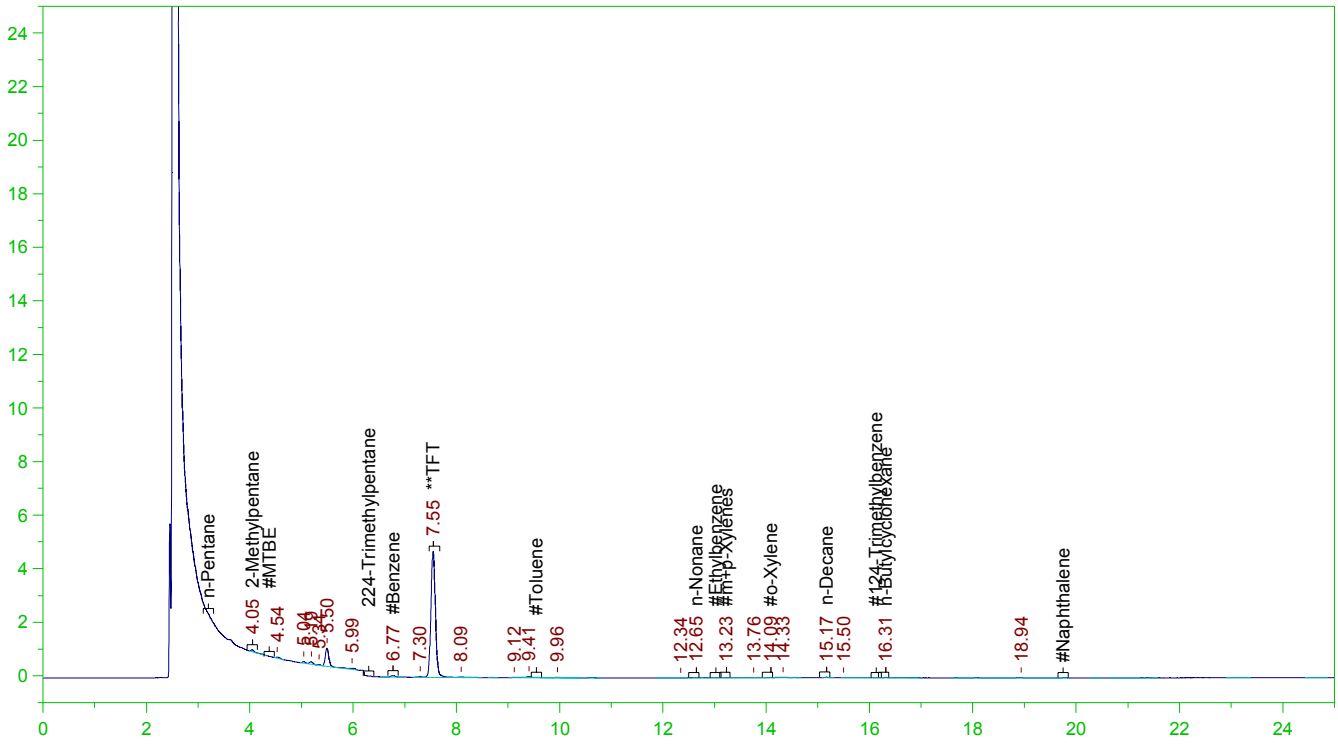
Mean RF for C9 to C10 Aromatic Hydrocarbons: 459.1725
Rt range for C9 to C10 Aromatics: 14.1 to 19.6
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:1535.198 C9-C10 Aromatics Amount: 7.288612E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.109	U
Benzene	6.765	6.765	6.765	224	.055	U
Toluene	9.555	9.555	9.555	154	.055	U
Ethylbenzene	.	.	.		.055	U
m+p-Xylenes	13.238	13.238	13.238	114	.109	U
o-Xylene	14.062	14.062	14.062	110	.055	U
124-Trimethylbenzene	16.156	16.156	16.156	69	.055	U
Naphthalene	19.748	19.748	19.748	116	.109	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	7.545	2.725	2.533	92.95	70-130

1R-45009 AL1 Batch ID: 13455

G:\Org\2GC\DAT\2GC082311_b\0823GC2B.0009.RAW H11080347-002A ;0823GC2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H11080347-002A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2B.0009.RAW
Date & Time Acquired: 8/23/2011 2:28:25 PM
Method File: G:\Org\2GC\Methods\lavar070811SBNB.MET
Calibration File: G:\Org\2GC\Cals\Vhn070811b.cal
Sample Weight: 50 Dilution: 1.09 S.A.: 1.09

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 284.0118
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 214.3126
Mean RF for all calibrated compounds: 324.5251
Rt range for Gasoline Range Organics: 3.96 to 15.23
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.11 to 12.5
Rt range for C9 to C12 Aliphatic Hydrocarbons: 12.55 to 19.65

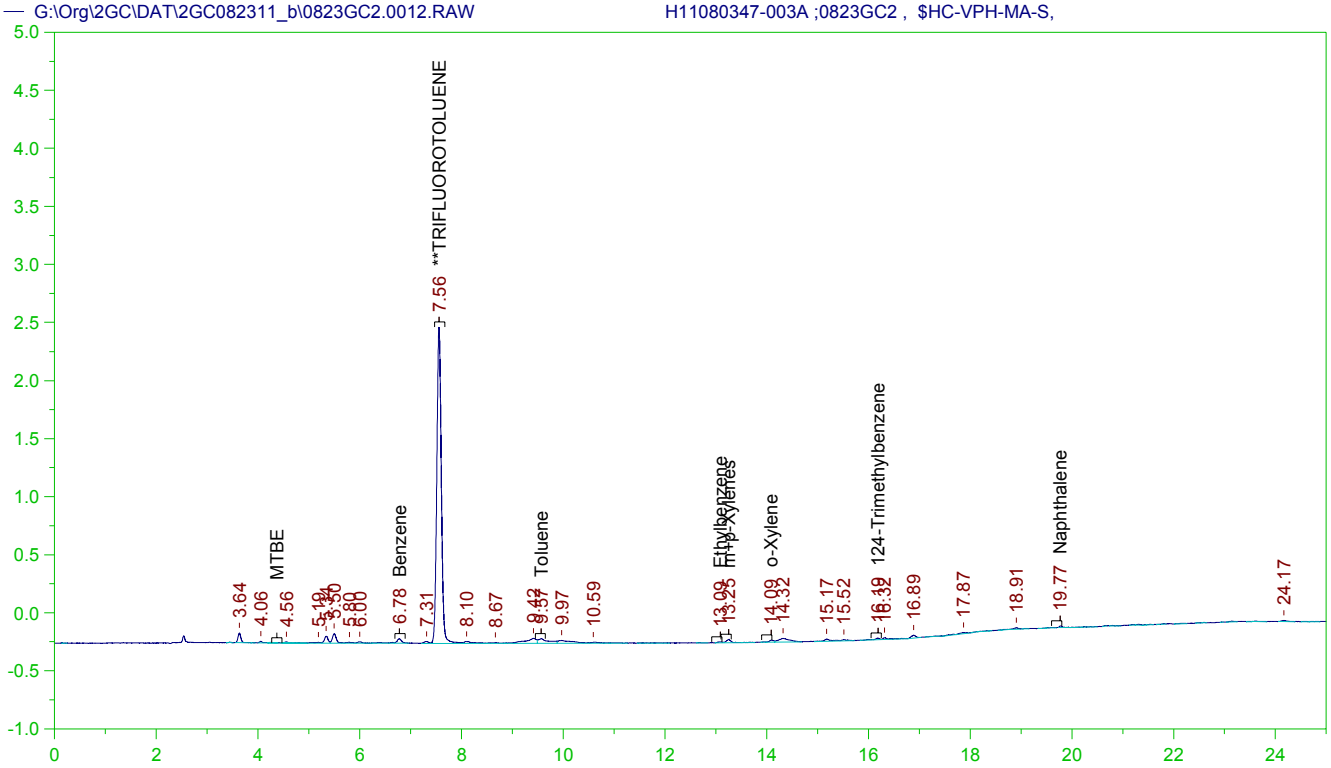
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	7.552	2.725	2.54	93.21	-

GRO Area:7738.863 GRO Amount: 0.5198588
TPH Area:8480.297 TPH Amount: 0.5696647

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:6746.379 C5-C8 Amount: 0.5178344
C9-C12 Area:1549.318 C9-C12 Amount: 0.1575975

1R-45010 AL1 Batch ID: 13455

G:\Org\2GC\DAT\2GC082311_b\0823GC2.0012.RAW H11080347-003A ;0823GC2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H11080347-003A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2.0012.RAW
Date & Time Acquired: 8/23/2011 4:11:05 PM
Method File: G:\Org\2GC\Methods\lavar070811.met
Calibration File: G:\Org\2GC\Cals\Vhn070811.cal
Sample Weight: 50 Dilution: 1.05 S.A.: 1.05

Mean RF for C9 to C10 Aromatic Hydrocarbons: 459.1725
Rt range for C9 to C10 Aromatics: 14.1 to 19.6
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:1444.458 C9-C10 Aromatics Amount: 6.606149E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.105	U
Benzene	6.778	6.778	6.778	228	.053	U
Toluene	9.568	9.568	9.568	548	.053	U
Ethylbenzene	13.086	13.086	13.086	60	.053	U
m+p-Xylenes	13.251	13.251	13.251	178	.105	U
o-Xylene	14.088	14.088	14.088	109	.053	U
124-Trimethylbenzene	16.19	16.19	16.19	81	.053	U
Naphthalene	19.769	19.769	19.769	73	.105	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	7.559	2.625	2.467	93.97	70-130

1R-45010 AL1 Batch ID: 13455

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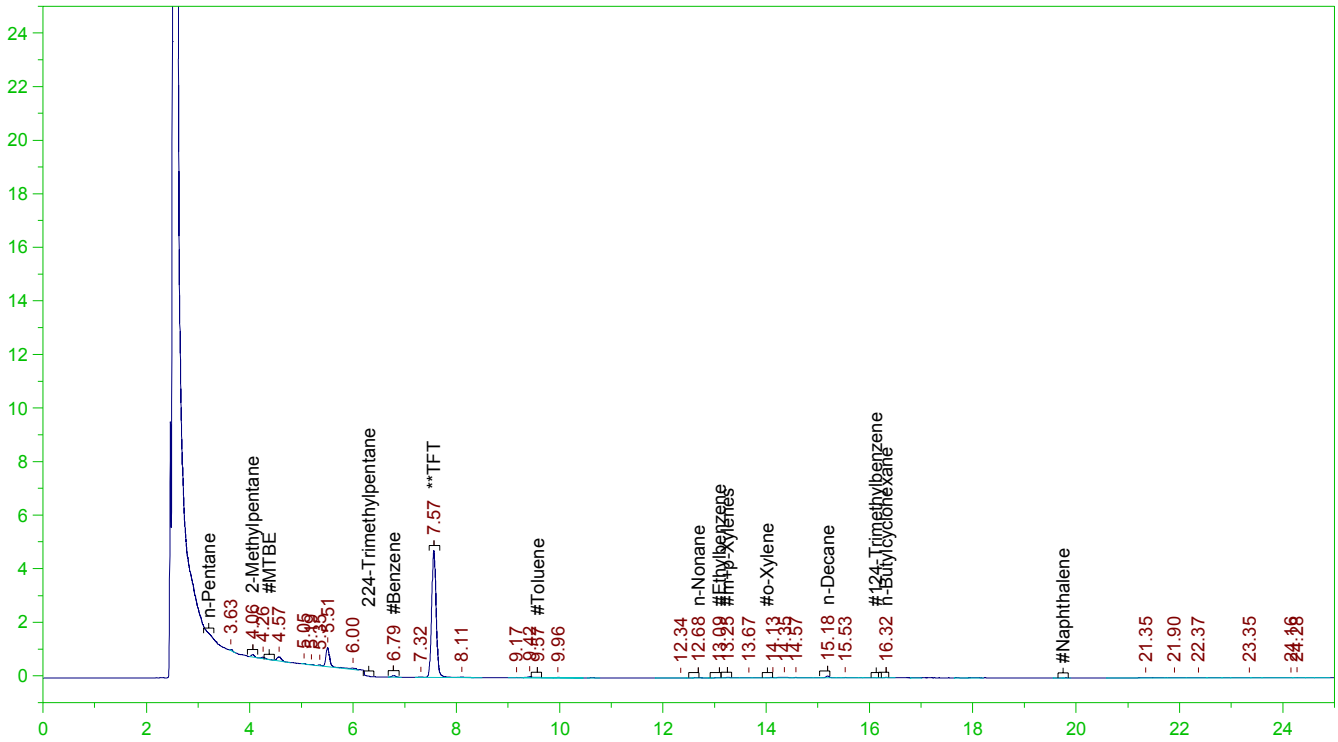

VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: H11080347-003A ;0823GC2 , $HC-VPH-MA-S,
Raw File: G:\Org\2GC\DAT\2GC082311_b\0823GC2B.0012.RAW
Date & Time Acquired: 8/23/2011 4:11:05 PM
Method File: G:\Org\2GC\Methods\lavar070811SBNB.MET
Calibration File: G:\Org\2GC\Cals\Vhn070811b.cal
Sample Weight: 50 Dilution: 1.05 S.A.: 1.05

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 284.0118
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 214.3126
Mean RF for all calibrated compounds: 324.5251
Rt range for Gasoline Range Organics: 3.96 to 15.23
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.11 to 12.5
Rt range for C9 to C12 Aliphatic Hydrocarbons: 12.55 to 19.65

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	7.566	2.625	2.472	94.19	-

GRO Area:9510.35 GRO Amount: 0.6154141
TPH Area:11078.74 TPH Amount: 0.7169043

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:7764.424 C5-C8 Amount: 0.5741061
C9-C12 Area:2377.041 C9-C12 Amount: 0.2329208

Workorder Receipt Checklist

CDM-Federal Programs VA

H11080347

Login completed by: Wanda Johnson
Date Received: 8/19/2011
Reviewed by: BL2000\kwiegand
Received by: TLL
Reviewed Date: 8/23/2011
Carrier name: FedEx Express

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	2.7°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Contact and Corrective Action Comments:

No date or time on sample jars. Sample estimated in the laboratory. Wj 8/19/11 Contacted Karin Mainzhouser on 8/22/11 regarding sample 001 over the MCL for EPH. Client stated to run Frac with PAH. JDH

CDM - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
Airbill # : 876697479765
No of Samples: 3

CHAIN OF CUSTODY RECORD
LibbyOU4Field/MT
CarrierName: FedEx
DateShipped: 8/18/2011

No: 20886
Lab: Energy - Helena
Lab Address: 3161 E Lyndale Ave
Lab_Address2: Helena, MT 59601

Lab #	Sample #	Tag	Sample Date	Matrix	TAT Days	Analyses	MediaCode	Comments
	1R-45008	AL1	8/18/2011	Soil	5	EPH/VPH		RUSH H110801 347
	1R-45009	AL1	8/18/2011	Soil	5	EPH/VPH		RUSH
	1R-45010	AL1	8/18/2011	Soil	5	EPH/VPH		RUSH

Special Instructions: Total of 15 bottles

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	D Hauger - CDM	8/18/11	Tracy Ford	8/19/11	9:42						

On Ice FedEx Express
2.7° Temp Blank

Appendix C
Communications

Mainzhausen, Karin

From: Ridenour, Rebecca [RRidenour@mt.gov]
Sent: Tuesday, August 30, 2011 5:13 PM
To: Mainzhausen, Karin
Subject: Libby asbestos & EPH samples

Hi Karin,

You contacted me this afternoon with some EPH results from petroleum contaminated soils CDM encountered during the asbestos removal in Libby. You report that two EPH soil samples were collected and both were analyzed to have greater than 200 ppb EPH. As a result, the samples were fractionated; one set of fractions were less than MDEQ RBSLs (Risk-based Screening Levels) while the other was greater than the C11-C22 RBSL.

With these results, your question to me was how to handle these soils.

I talked with representatives of the DEQ Superfund Group (Larry Scusa & John Podolinsky) and Sandi Olsen, Remediation Division Administrator. We were all in agreement that the over-riding human health concern in the asbestos and that the excavated soils should continue to be handled according to the superfund plan for that operable unit. As I understand it, the soils are being disposed at the mine site. DEQ does not support land farming the soils (i.e. to treat the petroleum contamination); rather continue forward with the asbestos disposal plan.

I also spoke to Lisa Dewitt, who is the DEQ lead on the EPA Superfund for the Libby Groundwater project. The contamination CDM found may already be documented as part of that EPA-lead superfund project (wood treating). If you could provide me with a map and/or GPS unit coordinates, I can work with her in determining what to do next.

Thank you for alerting DEQ to the petroleum contamination. If you have more questions related to petroleum releases or chemical results, please do not hesitate to contact me.

Rebecca Ridenour
Supervisor, Petroleum Technical Section
Montana Department of Environmental Quality
Helena, MT
(406) 841-5059